

AD 683060

TRANSLATION NO. 2179

DATE: 24 June 1966

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Title: Antiradiation Agents

Authors: L.A. Tiunov, G.A. Vasil'yev, E.A. Val'dshteyn

Source: Izdatel'stra "Nauka", Moscow, 1964, p.1-278

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## Translator's Preface

In spite of an extensive errata, which has been incorporated into the text during the course of this translation, a number of errors remain. These errors have been annotated by the translator whenever possible. In many instances, especially in connection with dosage, the text was ambiguous. The translator did not feel at liberty to change the text; therefore the ambiguity remains.

Errors were found in structural representations of formulas--these have not been corrected, except as called for in the errata, since this is beyond the scope of the translator's work. However, the reader is warned that some formulas are structured incorrectly in relation to the compound cited. These errors have not been annotated.

Every effort has been made to determine English equivalents for purely Russian drug names. When the formula was given, it was checked in the Morck Index (1960) and Handbook of Chemistry and Physics, published by the American Rubber Company. In those cases in which the formula could not be found, or was not given, the drug name was transliterated. English equivalents of chemical affixes were used, however, to give a better indication of the derivation of the drug (e.g. "phenyl" for "fenil," "chlor" for "klor," "sodium" for "natrium," etc.).

In a few instances, a drug will be called "ester or ether"--Russian uses the same word for both concepts and when the formula was not given, the correct translation could not be determined.

The column format of the book has not been duplicated in the typed translation. Instead the first column (compound, synonyms and formula), the second column (dosage, time and extent, radiation dose), and the third column (characteristic effects, bibliography reference) have been denoted as follows: Column 1--at left margin; drug name in capitals, followed by synonyms; the subjects on which the drug was used are indented and underlined under the drug name; under each subject, the entries in Column 2 and Column 3 are indicated by (2) and (3) respectively.

If a correction of the erroneous formulae is considered essential it is recommended that a request for detailed professional editing be initiated.

## FOREWORD

In the manual "Antiradiation Agents" (L.A. Tiunov, G. A. Vasil'ev, V. P. Paribok, The Academy of Sciences Edition, USSR, 1961) information was given on more than 500 preparations tested clinically and experimentally for radiation injury prophylaxis. This manual encompassed the basic literature (in this field) prior to 1960. In the past 3 years the number of publications in this field increased very sharply. Many new antiradiation agents and radiation sensitizers have been described. More complete data has been obtained on the effectiveness and mechanism of action of preparations already known. Experience has been accumulated in the clinical application of antiradiation agents.

After the publication of our manual a similar edition appeared in the German Democratic Republic entitled "Biologisch-Chemischer Strahlenschutz." The authors of this manual plan, as we do, to publish future supplements for their manual, and thus give it the character of a continuous edition.

Our new manual contains information on more than 1000 preparations, described prior to 1963. Data published in "Antiradiation Agents" (1961) are not repeated.

The limits set by the size of this manual spurred us to use an even more abbreviated form than in the previous edition. The entire bibliography appears at the end of the book. Bibliographical data are arranged in alphabetical order and are numbered; these numbers, in parentheses are given after the description of the action of a preparation. A number of abbreviations are used: I.V.--intravenous; I.M.--intramuscular; I.P.--intraperitoneal; S.C.--subcutaneous. Whenever it was possible, the effectiveness of the protection is shown by DRF (dose reduction factor), indicating how much an irradiation dose should be changed (for the subject under protection) in order that the effect of radiation would be the same as without the protection. The word irradiation (abbreviated irr.) denotes irradiation with roentgen rays, unless there are special detailed data. Physical conditions of irradiation are not described.

The structural formulae of preparations are given in the same form as they were given by the authors in reference articles. Structural formulae and synonyms of preparations described in the 1961 manual have not been repeated.

In view of the great importance of the oxygen effect in the action of antiradiation agents, whenever it was possible the composition of the gaseous medium during the time of irradiation is given. Absence of these indicators shows that the radiation was conducted in air.

We have also published in this manual, in addition to new preparations, all the most important data published prior to 1961, if, for any reason they were not published by us before.

In the preparation of this edition we have taken into consideration a number of recommendations from specialists who are engaged in this type of work in Soviet Russia. We would be very grateful for help in our further work: for indications of any insufficiencies and errors, and also for notifications about publications of authors (sending reprints).

We ask that all remarks and recommendations be sent to the following address: Leningrad, F-121, pr. Maklin 32, Institute of Cytology of the Academy of Sciences of the USSR.

V. P. Paribok.

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# SECTION I USE OF THERAPEUTIC AGENTS FOR PROPHYLAXIS OF RADIATION INJURIES

## ACMATINE SULFATE

### Mice L cell culture

- (2) 0.05 - 0.1 M one hour before irr. 1000 r.
- (3) By promoting aggregation of chromatin combatted inhibition of mitosis. (814)

ADENYLIC ACID; adenil, AMP, (AMF), vitamin B<sub>8</sub>, kardiomon, myoston, sarkolit, phosaden

### Mice

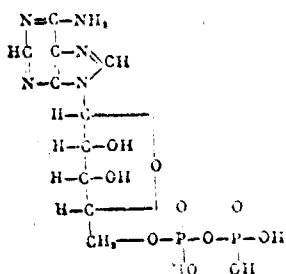
- (2) 3.5 mg/mouse before irr.
- (3) LD<sub>50</sub> in controls--612 r, in the experimental group--948 r. (605) See also (607a).

ADENINE HYDROCHLORIDE; 6-aminopurine, B<sub>4</sub>-hemozan

### Mice

- (2) Daily after irr. 600 r.
- (3) Decreased mortality and retarded development of leukopenia. (199a) See also (583, 607a).

ADENOSINEDIPHOSPHORIC ACID; ADP (ADF)



### Bacteria Escherichia coli E

- (2)  $5 \times 10^{-4}$  M immediately after irr. 16,000 r with subsequent 30-90 minutes incubation at 37°C.
- (3) Almost completely prevented destruction of DNA (DNK). (585) See also (607a).

ADENOSINE-5'-TRIPHOSPHORIC ACID; adophos, atepodin, atriphos, ATP (ATP), glukobazin, myotriphos, striadin, triadenil, triphosaden, triphosadenin, triphosil triphosphodin

Bacteria Escherichia coli B

- (2)  $10^{-3}$  M immediately after irr. 16,000 r with a subsequent 30-90 minutes incubation at 37°C.
- (3) Completely prevented destruction of DNA. (585)

Inbred mice, weight 20 g

- (2) I.P. 3.5 mg/mouse 5 minutes before irr. 810 r.
- (3) Survival in experiment group 36%, in controls 4%. (603)

Mice

- (2) 3.5 mg/mouse before irr.
- (3) LD<sub>50</sub> in controls--812 r, in experimental group--812 r. (603) See also (647).

## ADENOSINE - 3'-phosphate

Bacteria Escherichia coli B

- (2)  $10^{-3}$  M immediately after irr. 16,000 r with subsequent 30-90 minutes incubation at 37°C.
- (3) Almost completely prevented destruction of DNA. (585)

## ADENOSINE - 5'- phosphate

Bacteria Escherichia coli B

- (2)  $10^{-3}$  M immediately after irr. 16,000 r with subsequent 30-90 minutes incubation at 37°C.
- (3) Almost completely prevented destruction of DNA. (585)

## ENALIN

Bacteria Escherichia coli O111

- (2)  $10^{-2}$ ,  $10^{-3}$  M before irr. 15 and 40 kr.
- (3) Survival increased from 50 to 62% with smaller dose of irr. (519)

Paramecium caudatum

- (2) In subtoxic concentration before and during irr. 10,000 r (460 4/min).
- (3) Did not protect from inhibition of division. (143)

Thymocytes of rats

- (2)  $10^{-3}$  M 20 min. before irr. in vitro 500 rad.
- (3) Did not protect from destruction. (494)

Human kidney cells (tissue culture)

- (2) 0.01 - 5 mM 10-30 min. before irr. 500-1500 rad. (200 r/min).
- (3) Did not protect from destruction (802).

Mice

- (2) 5 min. before irr. 675-1200 r.
- (3) Protective action correlated with the degree of decrease in spleen oxygen consumption (790).

White mice, male and female, weight 18-20 g

- (2) 0.1 mg/mouse at various periods before gamma-irr.  $\text{Co}^{60}$  900 r.
- (3) Maximal protective effect when administered 20-40 min before irr. (84).

Mice, male and female strain H

- (2) I.V. 0.02 - 0.05 mg immediately before gamma-irr.  $\text{Co}^{60}$  1000 r (38-46 r/min).
- (3) All experimental control animals died in 5.5 days (179).

Mice, female, Bagg Swiss line, weight 20-25 g

- (2) I.P. 2 mg/kg 24 hours before irr. 800 r.
- (3) On the 30th day after irradiation survival 10%; all control animals dead by 21st day (725).

White mice, weight 22-25 g

- (2) I.P. 0.03 - 0.06 mg 5 - 25 min. before irr. 600 r (19.5 r/min).
- (3) 0.06 mg doubles the life span of experimental animals as against controls. Dose 0.03 mg was not effective (198). See also (81a, 163, 309a, 728).

ADRENALIN, boiled in water bath for 60-90 min, with the addition of  $\text{H}_2\text{O}_2$  calculating 0.2 ml 6% solution for 10 ml 0.1% solution.

Rabbits

- (2) S.C. 0.4 - 0.9 mg/kg and 1.5 - 1.9 mg/kg 30 min. before irr. -- gamma-irr.  $\text{Co}^{60}$ . Irr. twice, 1000 r each, with 10-15 days intervals.
- (3) Of 18 experimental animals 16 survived; of 17 controls, 11 survived. (4).

ADRENOCORTICOTROPHIC HORMONE; adrenocorticotrophin, aktar, ACTH (AKTG)

White rats, male, weight 200-250 g

- (2) 0.5 ml administered every other day for 3 weeks after irr. 400 r.
- (3) Leukolytic activity of blood and tissue increased in the first 24 hours, then sharply decreased in experimental animals. (8).

Rats, male

- (2) I.M. 3.1 units for 8 days before local irr. of testes. 612 r (34r/min).
- (3) Total phosphor content in testes of experimental and control animals was identical on the second day after irradiation (238). See also (239, 780).

## ADRENOCORTICOTROPHIC HORMONE zinc-phosphate, ACTH-zinc-phosphate

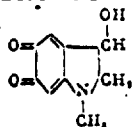
Rats, male, weight 150-200 g

- (2) I.M. 0.5 units for 1 kg of weight during 12-14 days starting 2-3 days after irr. 500 r.
- (3) Benevolent effect on the course and outcome of irradiation disease (333).

Dogs, male, weight 12-14 kg, age 1.5-3 years

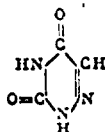
- (2) I.M. 0.5 units for 1 kg of weight during 12-14 days starting 2-3 days after irr. 500 r.
- (3) Benevolent effect on the course and outcome of irradiation disease (333).

## ADRENOCHROME

Mice

- (2) After irr. 700 r.
- (3) Increased survival of experimental animals was observed (547). See also (586).

## 6 - AZAURACIL, 2,3,4,5,-tetra-hydro-1,2,4, triazine-3,5-dion

Bacteria Escherichia coli

- (2) 50 mkg/ml in medium containing all required amino acids, after irr. 10 kr.
- (3) Decreased the number of induced mutations because of tryptophan-independence (554).

## SODIUM AZIDE

Spores of Streptomyces sp., strain T 12

- (2)  $2 \times 10^{-3}$  and  $2 \times 10^{-4}$  M within 3 hours after irr. 14,000 r/min.
- (3) Survival and frequency of mutation did not change (804).

## AZIDODITHIOCARBONIC ACID

Rats, male, weight 200-250 g

- (2) I.P. 600 mg/kg 10 min. before gamma-irr. 750 r (gamma-set-up EGO-2,  $\text{Co}^{60}$  7.5r/sec).
- (3) Experimental animals exhibited a statistically proven decrease in urinary secretion of dishepolozhitelnyi /T.N. - translation not known/ compounds (268).

## NITROGEN

Germinating beans Vicia faba

- (2) In calorimetric bomb 15-25 atm.  $\text{N}_2$  was added to 1 atm. of air and held 10 minutes before, during, and 5 minutes after irr. 200 r (50r/min).
- (3) When present during irradiation, growth inhibition was lessened to the level observed during irradiation in medium without oxygen (225).

Ascites Erlich carcinoma

- (2) 75 atm. added to 1 atm. of air before irr. in vitro 740-1000 r.
- (3) Weak protection. Criteria -- tumor transplantability (457).

Mice, Swiss line

- (2) I.P. under nembutal narcosis 60-75 mg/g. During irradiation with a stream of neutrons of 8 Mev, the mice were in a pure nitrogen medium for 14.27 and 40 sec. Irr. dose with potency of 600 rad/sec was equal to 2000 rad.
- (3) Survival corresponding to the period of stay in nitrogen was equal to 0, 10, and 80%. (825)

## ACONITATE

Mice, male, H strain

- (2) I.P. 5 mg immediately before gamma-irr.  $\text{Co}^{60}$  1000 r (38-46 r/min).
- (3) All experimental and control animals died within 5.5 days after irradiation (179).

## ACRYLAMIDE; amide of acrylic acid

Yeasts Saccharomyces vini, Megri strain 139 B

- (2) 1% during 24 hours at 30°C after gamma-irr.  $\text{Co}^{60}$  37.5-270 kr (1250 r/min) in the presence or absence of  $\text{O}_2$ .
- (3) Prevented death of cells irradiated in liquid as well as in solid medium. (148)

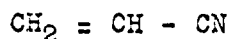
## bis - (2-ACRYLAMIDO-4-CHLORDIPHENYL)-SULFIDE

Mice

(2) I.P. 200, 250 mg/kg before irr. 800r.

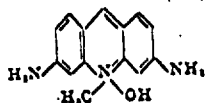
(3) Protective effect not detected (451).

ACRYLONITRILE; vinylcyanide, cyanide of acrylic acid

Yeasts Saccharomyces vini strain M6gri 139 B(2) 1% within 24 hours at 30° C after gamma-irr. Co<sup>60</sup> 37.5 - 140 kr (1250 r/min) in presence or absence of O<sub>2</sub>.

(3) Protected from death (148).

ACRIFLAVINE; acriflavin, angiflan, gonakrin, panflavin, flavipin, flaviform, choliflavin, chromoflavin, 3,6-diamino-10-methyl-acridine-hydroxide

Rats with Sarcoma 14 TK-III

(2) I.P. 0.005mg/100 g before or after irr.

(3) Decrease in mitosis in sarcoma cells of experimental rats (593).

## ACTINOMYCIN D

Dogs, weight 10 kg(2) I.V. 15 mg/kg before gamma-irr. Co<sup>60</sup> 2000 rad.

(3) Fibrinolytic systems of lungs depressed in controls. Lungs in experimental animals were completely normal (466).

## bis-(-beta- ALANYLAMINOETHYL)-SULFIDE

Mice

(2) I.P. before irr. 270 mg/kg 800 r.

(3) Protective effect not detected. (451)

## ALANINE

Phag T2

(2) 8% before irr. 30,000-300,000 r. (60,000 r/min).

(3) Did not protect from death. (608)

Bacteria Escherichia coli K 12

(2) Concentration close to molarity.

(3) Protected from death. (634)

Swine erythrocytes

- (2)  $3 \times 10^{-3}$  M in suspension or as filtrate before irr.  
66 kr. (1100 r/min).
- (3) Did not protect from hemolysis. (473)

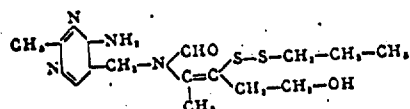
Human erythrocytes

- (2)  $3 \times 10^{-3}$  M in phosphate buffer with 60 min irr.
- (3) Did not protect from hemolysis. (468)

Human and swine erythrocytes

- (2)  $3 \times 10^{-3}$  -  $3 \times 10^{-4}$  M in neutral solution (1100 r/min).
- (3) Did not protect from hemolysis. (471)

ALINAMIN; anevrin-propyldisulfide, dithiopropylthiamin, nevriton, thiaminepropyldisulfide, thianebron, S-(2-N-(2'-methyl-4'-amino-pyrimidyl-(5')methyl)-formamido)-5-oxy-penten-(2)-11-(3)-propyldisulfide

Mice

- (2) After irr. 700 r.
- (3) Did not show substantial effect on the survival of animals. (547)

Mice

- (2) Before and after irr. 550 r.
- (3) Protective and therapeutic effect observed. (583)

Mice

- (2) No entry.
- (3) Insignificant protective action observed. (515) See also (513).

3-ALLYL -8-AMINO-ISOTHIOURONIUM BROMO-HYDRATEPhage Ph 1 producing lysis of intestinal rod bacteria, strain 600

- (2) 0.01 - 0.2 mkM before gamma-irr. 5000 r (500 r/min).
- (3) Survival corresponding to dose of preparation, 4 and 5%; in controls 0.53 and 0.07%. (326)

## 3-ALLYL-4-AMINOURACIL

Rats, male, weight 180-210 g

- (2) Internally 10 mg/100 g in 0.5 ml of starch paste 18 hours before irr. 650 r. (30 r/min).
- (3) Depolymerization of DNA in the liver of experimental animals was not detected during the first two days after irradiation. (132)

## 3-ALLYLBARBITURIC ACID

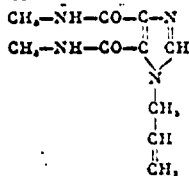
Phage Ph 1, producing lysis of intestinal rod bacteria, strain 600

- (2) 0.01 -0.02 mM before gamma-irr. 5000 r (500 r/min).
- (3) Survival corresponded to 1.8 and 1%; in controls 0.07 and 0.01% (326). See also 521 a).

## ALLYLISOTHIOCYANITE

- (2) No entry.
- (3) No entry.

## ALLYLNORANTIPHEIN



White mice, male, weight 18-22 g

- (2) S.C. 10, 25 and 50 mg/kg 30 min. before irr. or 100 mg/kg one hour before irr. 700 r (33.5 r/min).
- (3) With administration 30 minutes before irradiation, 17 experimental animals out of 24 survived first dose; 15 out of 23 survived the second; 24 out of 40 survived the third. In control animals, 7 out of 22 survived in one group and 9 out of 25 in another. With administration one hour before irradiation, 14 experimental animals survived out of 25, and in controls 6 survived out of 22 (23).

White mice, male, weight 18-22 g

- (2) S.C. 50 mg/kg 30 min. before irr. 700 r.
- (3) Absolute protective effect 34% (151).

White rats, male, weight 180-220 g

- (2) S.C. 25 mg/kg 30 min. before irr. 800 r.
- (3) Absolute protective effect 42% (151).



Rabbits, male, weight 2 - 2.5 kg

(2) S.C. 15 mg/kg 30 min. before irr. 1000 r.

(3) Absolute protective effect 13%. (151) See also (152).

ALLOXAN; ureide of mesoxalic acid



Paramecium caudatum

(2) In subtoxic concentrations before and during irr. 10,000 r (460 r/min).

(3) Protected against inhibition of tempo of division (143).

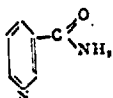
AMBUNOL; 4-/[N,N-di-(beta-oxyethyl)-(aminomethyl)]-1,2-ditret-butyl phenol

Cells of ascites Erlich carcinoma

(2) I.M. 125 mg/kg or I.P. 35 and 70 mg/kg administered to mice 45 min. before gamma-irr.  $\text{Co}^{60}$  200, 400, 800 r (27.7 r/min).

(3) With I.P. but not with I.M. administration, the number of chromosome aberrations increased. Combination of 70 mg/kg and 400 r gave an effect in 48 hours equal to the action of 800 r; after 72 hours, an effect surpassing this dose. Potentiating factor equal to 1.58 within 48 hours, and after 72 hours, 1.55. (27)

NICOTINIC ACID AMIDE; aminikotin, astrovit PP, amid PP, benikot, vitamin B<sub>3</sub>, vitamin PP, inovitan PP, niamid, nikamindon, nikobion, nikogen, nikovit, nicotinamid, nikofort, PP-factor, sabakotil



Cells of Erlich ascites carcinoma

(2)  $10^{-3}$  -  $10^{-5}$  M before irr. 30 kr.

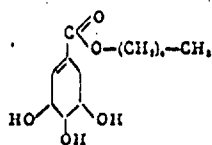
(3)  $10^{-3}$  prevented in 100%, and  $10^{-4}$  in 50%, the depression of glycolysis. (577)

Cells of Erlich ascites carcinoma

(2) 0.4% before irr. 20 kr.

(3) Protected from death. Transplantability increased from 56.8 to 98%. (579)

## AMYLGALLATE



Mice, weight 19-23 g.

- (2) 60 mg/kg weight 30 min. before irr. 600 r.
- (3) Survival in experimental group 16.7%; in controls 1.6% (78a).

## AMINAZINE, CHLORPROMAZINE

Bacteria Escherichia coli 0111

- (2)  $10^{-2}$  and  $10^{-3}$  M before irr. 15 and 40 kr.
- (3) Did not protect from death (519).

Mice

- (2) S.C. 2.5 - 10 mg/kg before irr. 500 and 700 r.
- (3) 2.5 mg dose showed some protective effect; 10mg/kg was not effective (296).

Mice

- (2) 0.5 - 1.0 mg/100 g before and after irr. 750 r.
- (3) With administration before irradiation, survival in experimental group was 30-40%. With administration after irradiation protective effect not observed. (487)

Mice

- (2) S.C. 1 or 10 mg/kg during 16 days before, or 24 hours before general irr. 650-675 r ( $LD_{50/30}$  -  $LD_{100/30}$ ).
- (3) Experimental animals survived correspondingly 91-80% and 75-70% (552).

Rats

- (2) 0.5 mg/kg once after irr., daily after irr, or before irr; and daily after irr. 1000 r.
- (3) Survival in experimental groups correspondingly equaled 30, 75 and 20%; in controls--60% (138).

Rats

- (2) Was administered before general irradiation of lethal dosage.
- (3) Survival in experimental group 50%, in controls--11% (396). See also (427).

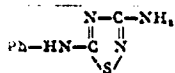
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Guinea pigs

- (2) S.C. 40 mg/kg 45-60 min. after general irradiation with contact roentgentherapy with Shaul apparatus with 2 fields from both sides of the body. Irradiation dose was 850 r for each field.
- (3) The roentgen action was weakened 60-80%. Development of destructive skin changes was either arrested or absent. It was discovered that this preparation has a beneficial effect on the growth of hair. (396)

Monkeys, Macaca mulatta

- (2) No entry.
- (3) (697). See also (2a, 550a).

3-AMINO-5-ANILINO-1,2,4-THIADAZOLEMice, male, Swiss line, weight 21 g

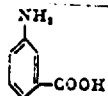
- (2) I.P. 4.5 mg/mouse 5-10 min. before irr. 900 r.
- (3) Survival in experimental group 6%; in controls--2%. (753)

3-AMINOACETOPHENONEWhite rats, male, weight 200-240 g

- (2) I.P. 0.1 g/kg 10 min. before irr. 650 r.
- (3) Survival in experimental group 40%, in controls--5%. (269)

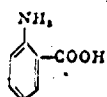
3-AMINO-4-BENZYL-AMINO-PYRIMIDINEWhite mice

- (2) S.C. 50 and 100 mg/kg in propyleneglycol 10-15 min. before irr. 700 r. Propyleneglycol was administered before irr. to control animals.
- (3) Survival in experimental groups, corresponding to doses of preparation, was 13.3 and 19.2%; all control animals died. (154)

m-AMINO BENZOIC ACIDMice R.A.P.

- (2) I.P. 92, 50, 20 mg for 20 g of weight before gamma-irr. 900 r.
- (3) Survival by 30th day after irradiation correspondingly 0, 20, 10%. All controls died. (416)

## o-AMINOBENZOIC ACID

Mice R.A.P.

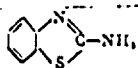
- (2) I.P. 30, 26, 14 mg for 20 g of weight before gamma-irr.  
Co<sup>60</sup> 900 r.
- (3) By the 30th day survived correspondingly: 8, 5, 30%; all controls died. (416)

## p-AMINOBENZOIC ACID

Mice R.A.P.

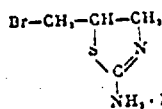
- (2) I.P. 90, 60, 30 mg per 20 g of weight before gamma-irr.  
Co<sup>60</sup> 900 r.
- (3) Survival by 30th day correspondingly 4, 20, 10%; all controls died. (416) See also (669).

## 2-AMINOBENZOTHAZOLE

Mice

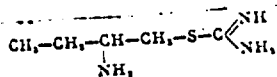
- (2) I.P. 50, 150 mg/kg before irr. 800 r.
- (3) Protective effect was not detected. (451)

## 2-AMINO-5-BROMETHYLTHIAZOLINE HBr

White mice

- (2) I.P. 25 and 37.5 mg/kg 10-15 min. before irr. 700 r.
- (3) Survival corresponding to doses: 0 and 15%; in controls--0%. (343)

## d-S-2-AMINOBUTYLISOTHIOURONIUM

Mice, male

- (2) I.P. 1.2 mg of neutral solution 15 min. before irr. 900 r (160 r/min).
- (3) Decreased number of anaphasic fragments in cells of crypts of small intestine from 36 to 24% (on 4th day after irradiation) and promoted normalization of mitotic activity. (629)

**p-AMINOBUTYROPHENONE**White rats, male, weight 200-240 g

- (2) I.P. 0.01 g/kg 10 min. before irr. 650 r, or internally 0.05 g/kg 10 or 60 min. before gamma-irr. 750 r.
- (3) With I.P. administration the survival was 80%, in controls--5%; with the internal administration survival corresponding to time of administration 30, 70 and 30% (sic), in controls 0, 7 and 10%. (269)

**AMINOGUANIDINE BICARBONATE**White mice, male, weight 18-20 g

- (2) Internally 30-40 min. before and immediately after irr. or 30 min. after gamma-irr.  $\text{Co}^{60}$  700 r.
- (3) Survival 9-10%; in controls--5%. (42)

**2-AMINO-4,6-DIBENZYLAMINO-PYRIMIDINE**White mice

- (2) S.C. 75 and 100 mg/kg 10-15 min. before irr. 700 r.
- (3) Protective effect absent. (154)

**AMINOPYRIDINE**Paramecium caudatum

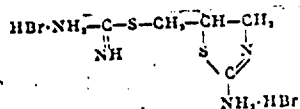
- (2) In subtoxic concentration with irr. 10,000 r (460 r/min).
- (3) Did not protect against inhibition of division. (143)

**2-AMINO-6-CARBETHOXYBENZTHIAZOLE**Paramecium caudatum

- (2) In subtoxic concentration with irr. 10,000 r (460 r/min).
- (3) Protected somewhat from the inhibition of division. (143)

**2-AMINO-4,4'-DICHLORDIPHENYL SULFIDE**Mice

- (2) I.P. 100-250 mg/kg before irr. 800 r.
- (3) Protective effect absent. (451)

**2-AMINO-5-(ISOTHIURONIUM BROMIDE)-METHYLTHIAZOLINE HBr**White mice

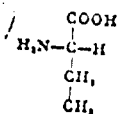
- (2) I.P. 15 and 25 mg/kg 10-15 min. before irr. 700 r.
- (3) Survival correspondingly 15% and 0%; in controls--0%. (343)

## 2-AMINO-5-ISOTHIURONIUM - METHYL - THIAZOLINE Br· HBr; AINT

White mice, male and female; weight 18-20 g

- (2) 3.5 mg/mouse at various periods before gamma-irr. Co<sup>60</sup> 900 r.
- (3) With the administration 30 min. before irr. survival close to 15%; in controls--0%. (84)

## alpha-AMINO-BUTYRIC ACID

Human and swine erythrocytes

- (2)  $3 \times 10^{-3}$  -  $3 \times 10^{-4}$  M in neutral solution before or after irr. (1100 r/min).
- (3) Did not protect from hemolysis. (471)

## 2-AMINO-5-MERCAPTO-1,3,4-THIADIAZOLE

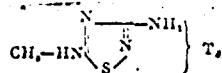
Mice

- (2) I.P. 100, 200 mg/kg before irr. 800 r.
- (3) Antiradiation effect absent. (451)

Rats

- (2) I.P. 125 mg/kg or 350 mg/kg 20-25 min. before gamma-irr.; internally 50 or 350 mg/kg before gamma-irr. 600 and 700 r (572-522 r/min).
- (3) With 600 r dose survival 50-70%, in controls: 32-37%. With 700 r dose, effect small. (254)

## 3-AMINO-5-METHYLAMINO-1,2,4 -THIADIAZOLE-TOLUENE-p-SULFONATE

Mice-male, Swiss line, weight 21 g

- (2) I.P. 5mg/mouse 5-10 min. before irr. 900 r.
- (3) Survival 10%, in controls--2%. (753)

## 2-AMINO-6-METHYL-BENZOTHAIAZOLE

Mice

- (2) I.P. before irr. 800 r.
- (3) Negligible antiradiation effect. (451)

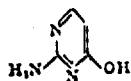
## AMINOMETHYLISOTHIURONIUM BROMIDE, AMP

Yeasts Saccharomyces vini, Megri strain 139B

- (2)  $10^{-2}$  and  $10^{-3}$  15-20 min. before irr. 30, 45, and 60 kr (1000 r/min).

- (3) Did not protect from death either in subtoxic ( $10^{-3}$ ) or toxic ( $10^{-2}$ ) concentration. (185)

2-AMINO - 4 - OXYPYRIMIDINE



White mice

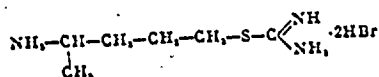
- (2) S.C. 500 and 1000 mg/kg in saturated solution of sodium bicarbonate 10-15 min. before irr. 700 r.  
(3) Protective effect absent. (154)

2-AMINO-5-(beta-OXYETHYL)-4-OXYPYRIMIDINE

White mice

- (2) I.P. 500, 750, and 1000 mg/kg 10-15 min. before irr. 700 r.  
(3) Survival corresponding to doses of preparation: 0, 10, and 10%; all controls died. (154)

S- $\sqrt{\text{nu}}$  - AMINOPENTYL - THIOUREA DIHYDROBROMIDE



Yeasts Saccharomyces vini, strain Megri 139E

- (2)  $10^{-2}$  M 15-20 min. before irr. 30, 45, and 60 kr (1000 r/min).  
(3) Did not protect from death. (185)

bis- $\sqrt{\text{epsilon}}$  - AMINOPENTYL - DISULFIDE, DIHYDROCHLORIDE

Yeasts Saccharomyces vini, Megri strain 139B

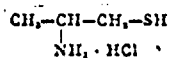
- (2)  $10^{-2}$  -  $10^{-5}$  M 15-20 min. before irr. 30, 45, and 60 kr (1000 r/min).  
(3) Did not protect from death. (185)

AMINOPROPYLISOTHIURONIUM BROMIDE, APT

Yeasts Saccharomyces vini, Megri strain 139 B

- (2)  $10^{-2}$  -  $10^{-4}$  M 15-20 min. before irr. 30, 45, and 60 kr (1000 r/min).  
(3) Protected from death with DRF up to 1.7. (185)

## beta-AMINOPROPYLMERCAPTAN HCl



(2) No entry.

(3) (267)

S-3-AMINOPROPYL-N<sup>1</sup>-METHYL-ISOTHIURONIUM

Mice-male, A-1 line

(2) I.P. 6.0 mg of neutral solution 15 min. before irr.  
900 r (160/min).

(3) Decreased number of anaphasic fragments in cells of crypts of small intestine from 36 to 23% (analysis was made on the 4th day after irradiation) and promoted normalization of mitotic activity. (629)

## S - (3-AMINOPROPYL)- THIOSULFONIC ACID

Mice, male, SVA line, weight 20 g

(2) I.P. 250 mg/kg 15 min. before irr. 1092 r.

(3) Survival on the 30th day 40%; in controls--5%. (508)

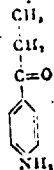
## 10-gamma-AMINOPROPYLPHENOXAZINE

Yeasts Saccharomyces vini

(2) 10<sup>-8</sup> M/ml in water solution before irr. 50,000 r.

(3) Protective effect absent. (114)

## p-AMINOPRIPIOPHENONE



Mice, female, CF<sub>1</sub> line

(2) 45 mg/kg after irr. of gastrointestinal system 1240 r.

(3) Isoeffective dose increased 1.4 times. (600)

Mice

(2) Added to mice rations; mice were continuously irradiated with gamma-rays Co<sup>60</sup> (140 r/day).

(3) Protective effect absent. (424)

White rats, male, weight 200-240 g.

(2) I.P. 0.03 g/kg 10 min. before irr. 650 r or internally 0.15 g/kg 10, 30 or 60 min. before irr. 750 r.

(3) Survival with I.P. administration 70%, in controls--5; with internal administration corresponding to time of administration 60, 90 and 40%, in controls--6, 7, and 10%. (269)



Dogs

- (2) I.P. 3 mg/kg 20-90 min. before irr. 500 r.  
 (3) Protective effect absent. (393) See also (725a).

## 5-AMINOTETRAZOLE SODIUM SALT

White mice, male, weight 18-20 g

- (2) Internally 0.05, 0.08 and 0.1 g/mouse 30-40 min. before, immediately after, or 30 min. after gamma-irr. 700 r.  
 (3) Survival with administration before irradiation 20-45%, with administration after irradiation 15%; in controls--5%. (42)

## 2-AMINO-1,3,4- THIADIAZOLE

Mice

- (2) I.P. 200 or 400 mg/kg before irr.  
 (3) Protective effect absent. (451)

## 5-AMINO-1,2,4, - THIADIAZOLE-3-THIOL

Mice

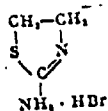
- (2) I.P. 5, 10 mg/kg before irr. 800 r.  
 (3) Protective effect absent. (451)

## N,2-AMINOTHIAZOLYLZL - beta - MERCAPTOETHYLAMINE

Mice

- (2) I.P. in various doses, one of which was of maximal tolerance 5-15 min. before irr. with roentgen or gamma-rays.  $Co^{60}$  in absolute deathly doses.  
 (3) Protective effect absent. (312)

## 2-AMINOTHIAZOLINE HBr

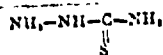
White mice

- (2) I.P. 150 and 200 mg/kg 10-15 min. before irr. 700 r.  
 (3) Survival correspondingly was 35 and 30%, in controls--0%. (343)

Rats, male, Wistar line, inbred strain, weight 300 g

- (2) I.P.  
 (3) Antiradiation effect observed. (719 a)

## N-AMINO-THIOUREA

Mice

(2) I.P. 0.5 - 1 mg/kg before irr. 800 r.

(3) Protective effect absent. (451)

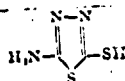
## 2-AMINO-5-THIO-1,2,4-TRIAZOLE

Mice, male, Swiss line

(2) I.P. 4.5 mg/mouse 5-10 min. before irr. 900 r.

(3) Protective effect absent. (752)

## 5-AMINO-1,2,4-TRIAZINE-3-THIOL

Mice

(2) I.P. 50, 100 mg/kg before irr. 800 r.

(3) Protective effect absent. (451)

## 3-AMINOTRIAZOLE

White mice, male, weight 18-20 g

(2) Internally 0.1 g/mouse 20-30 min. before, immediately afterwards, or 30 minutes after gamma-irr. 700 r.

(3) Survival with administration before irradiation increased 10-15%; therapeutic effect absent. (42)

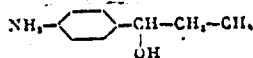
## 4-AMINOTRIAZOLE

White mice, male, weight 18-20 g

(2) Internally 0.1 g/mouse 20-30 min. before, immediately afterwards or 30 minutes after gamma-irr. 700 r.

(3) Survival with administration before irradiation increased 10-15%; therapeutic effect absent. (42)

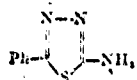
## p-AMINOPHENYL -PROPANOL-1

White rats, male, weight 200-240 g

(2) I.P. 0.04 g/kg 10 min. before irr. 650 r.

(3) Survival 60%, in controls--5%. (269)

## 2-AMINO-5-PHENYL-1,3,4-THIADIAZOLE

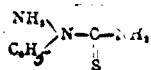


Mice, male, Swiss line, weight 21 g

(2) I.P. 5 mg/mouse 5-10 min. before irr. 900 r.

(3) Protective effect absent. (752)

## N-AMINOPHENYL-THIOUREA



Mice

(2) I.P. 10, 15 mg/kg before irr. 900 r.

(3) Antiradiation effect absent. (451)

## 1-AMINOPHENOXIAZIN HYDROCHLORIDE

Yeasts Saccharomyces vini

(2)  $10^{-8}$  m/ml in aqueous solution before irr. 50,000 r.

(3) Antiradiation effect absent. (114)

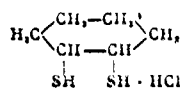
## 2-AMINO-2-CHLORDIPHENYLSULFIDE

Mice

(2) I.P. 150-300 mg/kg before irr. 800 r.

(3) Antiradiation effect absent. (451)

## dl-TRANS(CIS)-2-AMINOCYCLOHEXANTHIOL HCl



Mice

(2) I.P. or S.C. before irr., or I.P. after irr., 700 r (11 r/min).

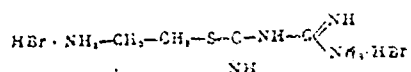
(3) With I.P. and S.C. administration before irradiation 19 and 13 experimental animals respectively survived out of 20. In controls only 2 of 20 survived. Administration after irradiation had no effect. (547)

Mice

(2) No entry.

(3) Significant protective action. (515)

## S-(beta-AMINOETHYL) -GUANYLTHIOUREA DIHYDROBROMIDE

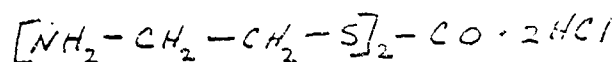


Yeasts *Saccharomyces vini*, Megri strain 139 B

(2)  $10^{-2}$  -  $10^{-3}$  M 15-20 min. before irr. 30, 45, and 60 kr (1000 r/min).

(3) Did not protect from death. (185)

bis - Beta -AMINOETHYL/-DITHIOCARBAMATE DIHYDROCHLORIDE



Yeasts *Saccharomyces vini*, Megri strain 139 B

(2)  $10^{-1}$  -  $10^{-2}$  M 15-20 min. before irr. 30, 45, and 60 kr (1000 r/min).

(3) Did not protect in either toxic or subtoxic concentration. (185)

beta-AMINOETHYL-(ISOCAFFEINE)-S-HYDROCHLORIDE

White mice

(2) I.P. 500 and 750 mg/kg 10-15 min. before irr. 700 r.

(3) Survival respectively 10 and 0%. All controls died. (154)

S-beta-AMINOETHYLISOTHIURONIUM BROMIDE; Antiradon, surrektan, AET

Bacteria *Escherichia coli*

(2)  $10^{-2}$  -  $10^{-3}$  M before irr. 15 and 40 kr.

(3) Survival increased: instead of 50--up to 96%, and instead of 0--up to 55%. (519)

HeLa tissue culture S-3

(2)  $4 \times 10^{-4}$  M, at pH 7, 15 min. before or 5 min. after irr. 500 r (69 r/min).

(3) Marked protection when added before, but not after irradiation. Survival (continued clone-formation) approximately doubled. (378)

Paramecium caudatum

(2) In subtoxic concentration with irr. 10,000 r (460 r/min).

(3) Markedly protected against inhibition of division. (143)

Paramecium caudatum

- (2) 0.017 - 0.033 mg/ml at pH 6.9 - 7.2 in air or in vacuum 15 min. before irr. 100 kr.
- (3) Detectable protective effect using survival and division tempo of infusoria as criteria. No additional effect in vacuum. (86)

Cells of Erlich ascites carcinoma

- (2) 0.3 mg/g 5-10 min. before gamma-irr.  $Co^{60}$  700 r.
- (3) Had no influence on number of anaphases and telophases with chromosome aberrations. (342)

Yeasts Saccharomyces vini, Megri strain 139 B

- (2)  $10^{-2}$  -  $10^{-5}$  M 15-20 min. before and during irr. 30, 45, and 60 kr (1000 r/min).
- (3) Subtoxic concentration  $10^{-3}$  protected from death with DRF = 1.3; concentration  $10^{-4}$  manifested uncertain protection, and  $10^{-5}$  did not protect at all. (185)

Bone marrow cells

- (2) 0.0035 - 0.13 M 1 min.-4 hours before irr. in air and in  $N_2$ .
- (3) Optimal conditions of protection -0.00325 M 1-15 min. before irr. In conjunction with anoxia, there was no increase in protection. (744)

Human kidney cells (tissue culture)

- (2) 1.6 - 128 mM 10-30 min. before and after irr. 3000 rad. (200 r/min).
- (3) Protected from death with DRF up to 2.2 with administration before, but not after, irradiation. Maximal protective concentration 64 mM. The addition of serum (5-100%) intensified the protective effect. (802)

Cells of Erlich ascites carcinoma

- (2) 0.3 mg/ml with pH 7.5 - 8.0, 30-35 min. at 37°C before gamma-irr.  $Co^{60}$  400 r (344 - 372 r/min) in presence of air or  $N_2$ .
- (3) Decreased number of chromosome aberrations 1.6 times in air, and 1.8 times in  $N_2$ . (318)

Cells of Erlich ascites carcinoma

- (2) 0.01 M in Hanks solution, containing 1.5% glycerine, 5-7 min. before irr. in vitro 4 kr at 20, 4, and -78°C.
- (3) Protected from death. Protective effect larger at -78°C and 4°C than at 20°C. (452)

Tissue culture of human epidermal carcinoma

- (2) 5-200 mg/ml in synthetic salt medium SRI-6 before gamma-irr.  $Co^{60}$  100-10,000 r (71.43 r/sec).

- (3) Protection detected using clone formation as criterion with doses up to 5000 r. (560)

White mice, male and female, weight 18-20 g

- (2) 10 mg/mouse at various periods before gamma-irr.  $\text{Co}^{60}$ , 900 r.  
 (3) Optimum protection with administration 15 min. before irr. (84)

Thymocytes of rats

- (2)  $2 \times 10^{-4}$  M 20 min. before, or 15 min. after irr. in vitro 500 rad.  
 (3) Survival increased from 47 to 63% only when administered before irradiation. (494)

Mice, female

- (2) I.P. 250 mg/kg 30 min. before irr. 1007, 1100, 1200, 1300, and 1400 r.  
 (3) Survival corresponding to doses of irradiation: 100, 56, 45, 5 and 0%. (370)

White mice, weight 16-22 g

- (2) I.P. 150 mg/kg or 300 mg/kg directly before irr. 700 r.  
 (3) Survival in experimental groups was respectively 71.4 and 45.6%; all controls died. (125)

White mice

- (2) I.P. 300 mg/kg 10 min. before irr. or internally 500, 600 and 700 mg/kg 30-40 min. before gamma-irr.  $\text{Co}^{60}$  750 r.  
 (3) Survival with I.P. administration 40-60%; with internal administration 43%; all controls died. (256)

White mice

- (2) 150 mg/kg 15 min. before irr. 700 r.  
 (3) Survival 71.4%; all controls died. (270)

White mice, male and female, weight 20-25 g

- (2) S.C. 10 mg 7-9 min. before irr. 700 and 1300 r (50 r/min).  
 (3) Marked protection of intestinal epithelium according to criteria: number of cells at the medium line of crypts, mitotic index, and number of cells with chromosome aberrations. (298)

White mice, male, weight 21-23 g

- (2) I.P. 3 mg/mouse 10-15 min. before irr., with proton impulse with energy of 660 Mev, medium flux density  $10^8 - 10^9$  protons/cm<sup>2</sup> in one sec. (300-400 rad/min).  
 (3) With the dose 1180 rad by 30th day out of 14 experimental mice 6 survived; with dose 1444 rad 10 out of 10 survived; with dose 1180 rad all controls died. (356)

White mice, male and female, weight 18-23 g

- (2) I.P. 150 mg/kg 5-10 min. before irr. 700 r, or gamma-irr. Co<sup>60</sup> 850 r, or protons with energy of 60 Mev 1200-1600 rad.
- (3) Survival in the first group 61.8%; in the second, 40%; in the third, 54-87%. Survival of corresponding controls was: 1, 4, 0, 0%. (355)

Mice

- (2) Administered before irr.
- (3) Increased survival and regenerative processes in the experimental animals. (337)

White mice, R.A.P.

- (2) I.P. 7 mg/ 20g of weight before gamma-irr. Co<sup>60</sup> 900 r.
- (3) By 30th day survival was 8%; all controls died. (416)

Mice

- (2) I.P. 7 mg/kg 15 min. before irr. 1025 r.
- (3) Survival by 30th day after irradiation 30-40%. (417)

Mice, male, line A

- (2) I.P. 8.8 mg of neutral solution 15 min. before irr. 225-1500 r (180 r/min).
- (3) In all doses decreased number of chromosome aberrations in the cells of crypts of small intestine. The number of fragments, but not of bridges was significantly lower on the 2-5th day after irr. 900 r. Protection of mitotic activity observed with 900 r irradiation (return to norm on the 5th instead of 3rd day after irradiation), or with 1500 r, but not with 225 r. (629)

Mice, female, Walter Reed-Bagg line, weight 22-26 g

- (2) Internally 1.5 mg/kg 2,3,5,16, and 24 hours before irr. 770r.
- (3) Survival by 30th day after irradiation, correspondingly equal to: 72, 49, 70, 30, and 20%. In controls: 0, 15, 15, 0, and 10%. (437)

Mice, female, DAL-Swiss line, weight 17-20 g

- (2) I.P. 10 mm 20-30 min. before irr. 460 r.
- (3) Survival by 60th day: 20%; all controls died. (610)

Mice, male

- (2) 250 mg/kg 30 min. before local irr. of testicles 500 r.
- (3) Equally lethal mutations observed in experimental and in control groups. (766)

Mice, male, Swiss line, weight 21 g

- (2) I.P. 8mg/mouse 5-10 min. before irr. 900 r.
- (3) Survival 83%; in controls--2%. (752)

Mice

- (2) I.P. 20 mm 7-10 min. before irr. 800 and 1100 r.
- (3) Survival with 800 r, 50-65%; in controls--all died from 650 r dose. With 1100 r, irradiation protective effect absent. (806) See also (255, 273, 276, 511, 630, 826).

White rats

- (2) I.P. 200, 250 mg/kg 10-25 min. before, or internally 400, 500, 600 mg/kg 30-60 min. before gamma-irr. Co<sup>60</sup> 750 r.
- (3) Survival 7-13%; all controls died. (256)

Rats

- (2) I.P. or internally 300 or 400 mg/kg before, or after irr. 900 r.
- (3) Protection only with I.P. administration of 300 mg/kg. (808)

Rats, male

- (2) I.P. 300 mg/kg within 20 min. after irr. 900 r.
- (3) Injuries to sex glands were the same in experimental and control animals. (462)

White rats, weight 160-200 g

- (2) I.P. 150 and 300 mg/kg immediately before irr. 800 r.
- (3) Survival in experimental groups correspondingly 0, and 10%; all control animals died. (125)

Rats, Sprague-Dawley line

- (2) I.P. 400 mg/kg.
- (3) LD<sub>50/30</sub> increased to 1240 r. (449)

Rats, male, weight 150-175 g

- (2) I.P. 200 mg/kg 15 min. before irr. 450 r in one hour after irr. administered I.P. 30 mcurie I<sup>131</sup>.
- (3) Manifest decrease in I<sup>131</sup> absorption by thyroid gland of experimental animals observed after 4, 24 and 48 hours. (794)

Rats

- (2) I.P. 150 mg/kg 5-15 min. before irr. 400 r.
- (3) In experimental groups the changes in the activity of spleen adenosinetriphosphatase and small intestine cholinesterase expressed to a lesser degree. (522)



Rats

- (2) I.P. 200 mg/kg 15 min. before and 100 mg/kg during gamma-irr. Co<sup>60</sup> 75, 150, 300 and 600 r.
- (3) Protective effect on changes in cholinesterase activity not observed. (815)

Rats

- (2) I.P. 300 mg/kg before irr. 500 r.
- (3) Oxygen utilization by spleen tissue sections of experimental animals decreased 22% in two days; in controls, 34%. (429)  
See also (428, 482, 645).

Guinea pigs, rats

- (2) 100-150 mg/kg 10 min. before local irr. 1500-5000 r.
- (3) Slight protective effect (less skin injury) with 1500 r dose only. (805)

Dogs

- (2) I.P. 100 mg/kg 5-30 min. before irr. 594 r.
- (3) Survival by 30th day 24%; in controls--29%. (386)

Dogs

- (2) I.V. 100 mg/kg before irr. 500 r.
- (3) Protective effect absent. (393)

Dogs

- (2) I.V. 125 mg/kg before irr. 900 r.
- (3) Survival was considerably higher in the experimental group than in the control group. (670 b)

Monkeys, *Macaca mulatta*

- (2) No entry.
- (3) (697). See also (81a, 256a, 309a, 455a).

Beta-AMINOETHYLISOTHIURONIUM CHLORIDE HYDROCHLORIDE, AET, Cl, Hcl

Mice, male

- (2) 8 mg/mouse 5, 30, 60 min. or 2, 3, 4, 5, 6, hours before irr. 590 r (LD<sub>50</sub>/30).
- (3) Survival correspondingly 100, 88, 92, 86, 80, 94, 90, 82%. (602)

Rats, male, with Yoshida sarcoma, weight 90-120 g

- (2) I.P. or I.V. 75-150 mg/kg before fractional irr. 10 x 100 r, 100 x 20 r, 4 x 400 r.
- (3) In contrast to healthy tissues the radiosensitivity of tumors did not change. In experimental groups with I.P. (150 mg/kg) and with I.V. administration (75 mg/kg) survival 20%. All controls died. (496)

Rats, 8 to 17 days old

- (2) 150 mg/kg before irr. 600 r.
- (3) Protective effect was more manifest in rats 17 days old. (733)

beta-(AMINOETHYLCAFFEINE) -8-HYDROCHLORIDE

White mice

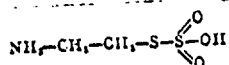
- (2) I.P. 500 and 750 mg/kg 10-15 min. before irr. 700 r.
- (3) Survival correspondingly 0, and 20%; all controls died. (154)

S-beta-AMINO-ETHYL-6-METHYL-URACIL BROMINE HYDRATE

White mice

- (2) I.P. 500, 750, and 1000 mg/kg 10-15 min. before irr. 700 r.
- (3) Survival correspondingly 0, 10, and 0%; all controls died. (154)

beta-AMINOETHYLTHIOSULFURIC ACID



Yeasts Saccharomyces vini, Megri strain 139 B

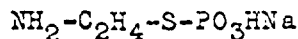
- (2)  $10^{-2}$  -  $10^{-4}$  M 15-20 min. before irr. 30, 45, and 60 kr (1000 r/min).
- (3) Did not protect from death. (185)

2-AMINOETHYLTHIOSULFONIC ACID

Mice, weight 18-22 g

- (2) I.P. 6 mg/kg 10 min. before irr. 725 r.
- (3) Survival on 30th day after irr. 46%; in controls--1%. (555)

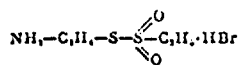
S-(2-AMINOETHYL)-PHOSPHOTHIONATE SODIUM SALT; sodium salt of aminoethylthiophosphate, sodium salt cysteamine -s-phosphate



Mice, male, CBA line, weight 20 g

- (2) I.P. 400 mg/kg 15 min. before irr. 1092 r.
- (3) Survival on 30th day after irr. 95%; in controls--5%. (508)

S-(2-AMINOETHYL)-ETHANETHIOSULFONATE HYDROBROMIDE



Mice, male, CBA line, weight 20 g

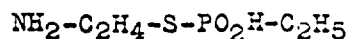
- (2) I.P. 35 mg/kg 15 min. before irr. 1092 r.
- (3) Protective effect absent. (508)

## AMMONIUM CHLORIDE

Spores Streptomyces sp., strain T 12

- (2) 0.5% solution during 3 hours after irr. with doses up to 1,000,000 r (4000r/min).
- (3) Prevented increase of survival observed with postradiation incubation of spores in water. (604)

S-(2-AMMONIUM -ETHYL)-ETHANEPHOSPHOTHIONATE; aminoethylethanethio-phosphoric acid



Mice, male, CBA line, weight 20 g

- (2) I.P. 70 mg/kg 15 min. before irr. 1092 r.
- (3) Protective effect absent. (508)

ANGIOTROPHINE; extract of pancreas (without insulin)

Mice and rats

- (2) I.P. 0.5 - 0.7 mg/kg and 2-5 mg/kg 2 hours before irr. with sublethal and absolute lethal doses of gamma- and roentgen rays. S.C. or I.P. 0.3 - 0.5 mg/kg during 3 days before irr. In doses of 0.1 - 0.2 mg/kg used on 1-6th, or 6-16th day after irr.
- (3) Survival in experimental groups receiving preparation before irr. in single 0.5 - 0.7 mg/kg dose was 30-40%; with administration during 3 days before the irr.--15-30%. Dose 2-5 mg/kg worsened the course and outcome of radiation disease. Therapeutic application of the preparation was ineffective. (264)

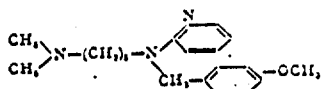
ANDANTOL; andanton, D201, isotipendylhydrochloride, nilergeks, odantol, thiodantol, udantol, N-dimethylaminoisopropylthiophenylpyridylamine hydrochloride



White rats, weight 170-200 g

- (2) I.M. 10 mg/kg twice a day during first 6 days after poisoning with polonium 210 calculated 0.05 - 0.065 mcurie/kg.
- (3) Average length of life 19.1 days; in controls--12.5 days. (237)

ANTALLERGAN; allergan, antamin, antizan, diaminid, dorantamin, izamin, koradon, kriptin, mepiran, mepiramon, mepiraminmaleate, neoantergan, paraminal, parminyl maleate, prinizamin maleate, renetamin, 2786 R.P., stamin, statomin, maleate, tilogen, N, N-Dimethyl-N'-(2-pyridyl)-N'-(p-metoxibenzyl)-ethylenediamine



#### Mice

- (2) Administered 5 min. before irr. 675-1200 r.
- (3) Protective effect correlated with the degree of decrease in spleen oxygen consumption. (790)

#### Rats, male, weight 150-225 g

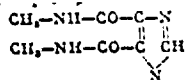
- (2) I.P. 1 mg/kg before irr. of abdomen 1500 r (size of the field 11.3 cm<sup>2</sup>) under nembutal narcosis (25 mg/kg I.P.); later, trypan blue was administered intravenously 0.4 ml 1% solution for 100 g.
- (3) 24, 48 and 72 hours after irradiation vascular permeability of intestines the same as in controls. (816)

#### ANTIHYALURONIDASE SERUM

##### Rats

- (2) S.C. at 1 ml during 4 days before or after local irr. 3500 r.
- (3) Radiation dermatitis developed more slowly in experimental animals. (616)

#### ANTIPHENIN; IEM-168



#### White mice, male, weight 18-22 g

- (2) S.C. 200 mg/kg immediately after irr., 100 and 200 mg/kg 30 min. before irr., 50, 100 and 20 mg/kg one hour before irr., 200 mg/kg 3 hours before the irr., 25 mg/kg on the second day and during 4 days after irr. 700 r (33.5r/min).
- (3) By the 30th day, of 42 experimental mice receiving preparation immediately after irr., 28 survived; 16 of 49 controls survived. Administration 30 min. before irr. - 25 out of 32 and 50 out of 66 survived; in controls, 10 out of 33 and 19 of 57 survived. Administration 1 hr. before irr. according to above doses--22 out of 32, 25 out of 26 and 19 out of 31 survived; in controls, 7 out of 22, 5 out of 24 and 5 out of 25. Administration 3 hrs. before irr.--22 out of

34 survived; in controls, 10 out of 32. Administration after irr.--36 out of 57 survived; in controls, 5 out of 24 survived. (23)

White mice, male, weight 18-22 g

- (2) S.C. 100 mg/kg 10 min. before irr. with dose 700 r or 50 mg/kg immediately after irr.
- (3) Absolute protective effect 45 and 37%. See also (152), (151)

White rats, male, weight 180-220 g

- (2) S.C. 50 mg/kg 30 min. before irr. 800 r or 25 mg/kg immediately after irr.
- (3) Absolute protective effect 33%. With administration after irradiation effect absent. (151)

Rabbits

- (2) S.C. 30 mg/kg one hour before irr. 1 hr.
- (3) From 13 experimental animals by 30th day 10 survived, from 13 controls--7. (23)

Rabbits, male, weight 2-2.5 kg

- (2) S.C. 30 mg/kg 30 min. before irr. 1000 r.
- (3) Absolute protective effect 15%. (151)

Dogs, male, weight 14-16 kg

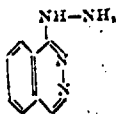
- (2) S.C. 25 mg/kg 30 min. before irr. 600 r.
- (3) Protective effect absent. (151)

ANTIPHEINY; alkyl derivatives of diamides of imidazoledicarboxylic acids

Rats

- (2) Administration before irr. 700-800 r.
- (3) Survival 55% higher than in controls. (305)

APRESOLIN; 1,1-hydrazinophthalazine, apressin, VA-5968, C-5968, hydralazine, hypophthaline



Mice

- (2) S.C. 10 mg/kg 10 min. before irr. or 10-30 min. after irr. I.P. 3.5 min. or 16 hours before irr. 800 r.
- (3) With S.C. administration before irr. 27 experimental animals survived out of 72; with administration after irradiation--11 out of 24 survived, 4 out of 34 survived. All controls died. With I.P. administration 12-14% survived. (551)

## ARABINOSE

Spores Streptomyces sp., strain T 12

- (2)  $2 \times 10^{-4}$  M during 3 hours after irr. (4000 r/min).
- (3) Survival and mutation frequency did not change. (804)

## ARALIA MANSHURICA (RUPP ET MAXIM)

White rats, male, weight 150-170 g

- (2) As decoction, calculated 5 ml for 6 animals, was admixed to rat food. Was consumed immediately after irr. and during 30 days after irr. 700 r (34 r/min).
- (3) By 20th day after irr. 61.1% survived; in controls-- 68.7%. (351) See also (351a).

## ARGININE - HYDROCHLORIDE

Cells of ascites Erlich carcinoma

- (2) 0.2 mg/ml before or after irr. in vitro 800 r (477 r/min).
- (3) The number of chromosome aberrations decreased from 37.8 to 24.6%. (340)

## AGRON; Ag

Germinating beans Vicia faba

- (2) Germinating beans irr. with different doses in a chamber containing 2, 4 or 5 atm. Ag at room temperature, or at 0-5° C in addition to 1 atm. of air.
- (3) Addition of 4 or 5 atm. to the air completely inhibited oxygen-related radiosensitivity. With 0-5° C protective effect was very feeble. (457)

Germinating beans Vicia faba

- (2) In calorimetric bomb 2-20 atm. Ag were added to 1 atm. of air and the germinating beans were kept 10 min. before, during, and 5 min. after irr. 200 r (50 r/min).
- (3) With 20 atm. decreased growth inhibition to the level present with the irradiation in oxygen-free medium. (226)

Erlich ascites carcinoma

- (2) 25 atm. added to 1 atm. of air. Irr. in vitro 740-2000 r.
- (3) Did not protect according to criteria of tumor transplantability. (457)

## ARSENOBENZENE - SODIUM

Rats with MTK-III sarcoma

- (2) 9 mg/100 g, 18 mg/100 g, 1, 3, and 6 hours before or immediately after irr.
- (3) Increased the inhibition of mitosis in tumor cells. (553)

## ARSENO - PHENYL -(1-AZO-5')-3,5,3'-TRIODOETHYRONINE

Black mice, female, weight 20-25 g

- (2) 3 mg/25 g before irr. 700 r (85 r/min).
- (3) Survival in control group--7%; all experimental animals died. (353)

## SODIUM ASCORBATE

Bacteria Bacillus subtilis

- (2) 1% in physiological solution before irr. 100,000 - 400,000 r.
- (3) Protected spores from death. LD<sub>50</sub> with  $68.6 \times 10^3$  increased to  $91.2 \times 10^3$ . (707)

## ATROPINE SULFATE

White mice, weight 22-25 g

- (2) I.P. 1 mg 5-25 min. before irr. 600 r.
- (3) Protective effect absent. (198)

Mice, female, strain H

- (2) 0.03 mg immediately after gamma-irr. Co<sup>60</sup> 1000 r (38-46 r/min).
- (3) In 7 days all experimental and control animals died. (179)

## AURANTINE

Yeasts Saccharomyces vini, Megri strain 139 B

- (2)  $10^{-4}$  M in 5% alcohol before and during, or after irr. 80 kr with gamma-rays Co<sup>60</sup> in air, in O<sub>2</sub> or in vacuum.
- (3) Present during irr., protected from death in the O<sub>2</sub> atmosphere and in air. In vacuum, the protective effect was absent. (157a)

## AUREOMYCIN

Seeds of beans Vicia faba

- (2) 300 mkg/ml 110 min. between the first dose of 600 r in vacuum and the second--300 r in air.
- (3) Increased the number of two-hit chromosome aberrations by inhibiting post-radiation reunion of chromosome fragments. (819)

Yeasts Saccharomyces vini, Megri strain 139 B

- (2)  $10^{-4}$  M in 5% alcohol before and during, or after irr. 80 kr gamma-rays Co<sup>60</sup> in the air, in O<sub>2</sub>, or in vacuum.
- (3) Present during irr., protected from death in the O<sub>2</sub> atmosphere, and in air. In vacuum, the protective effect was absent. (157 a)

Mice

- (2) 3 mg/g added to feed from the 15th day after irr. 675-750 r.  
 (3) Survival higher than in controls. (785)

## ACENAPHTHENE

Mice, female, strain H

- (2) I.P. 1 mg immediately before gamma-irr.  $\text{Co}^{60}$  1000 r  
 (38-46 r/min).  
 (3) All control and experimental animals died by the 10th day  
 after irr. (179)

## 2-ACETAMIDO-4'-CHLORDIPHENYL-SULFIDE

Mice

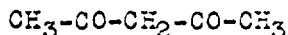
- (2) I.P. 200, 300 mg/kg before irr. 800 r.  
 (3) Protective effect absent. (451)

## 2-ACETYL -AMINO-5-MERCAPTOTHIODIAZOLE

Rats

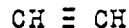
- (2) I.P. 125 mg/kg, 300 mg/kg, internally 50 mg/kg, 350 mg/kg  
 20-25 min. before gamma-irr.  $\text{Co}^{60}$  600 and 700 r  
 (572-582 r/min).  
 (3) With dose 600 r, survival 50-70%; in controls--32-37%.  
 With dose 700 r, the effect was slight. (254)

## ACETYL-ACETONE

Bacteria Escherichia coli K 12

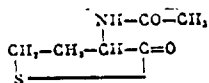
- (2) No entry.  
 (3) Did not protect from death. (634)

## ACETYLENE

Sprouting seeds of beans Vicia faba

- (2) In the calorimetric bomb, 4 atm. of  $\text{C}_2\text{H}_2$  added to 1 atm.  
 of air and held 10 min. before, during, and 5 min. after  
 irr. 200 r (50 r/min).  
 (3) Decreased growth inhibition. The increase was approximately  
 1.5 times greater than with irr. in the air. (225)

## N-ACETYL-alpha-HOMOCYSTEIN-THIOLACTONE

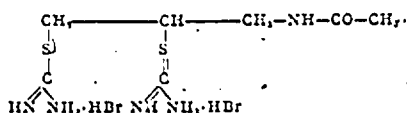




Mice, weight 16-18 g

- (2) Parenterally 10 min. or internally 30 min. before irr. 550 r.  
 (3) Survival, on 28th day after irr., was 13.5%. In analogous conditions with the administration of cysteine, the survival was 12%. (398)

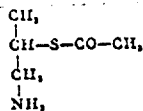
N-ACETYL-2,3-DI-(ISOTHIURONIUM-BROMIDE)-PROPYLAMINE



White mice

- (2) I.P. 50 and 75 mg/kg 10-15 min. before irr. 700 r.  
 (3) Survival correspondingly was 5 and 0%; in controls--0%. (343)

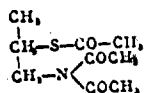
S-ACETYL-2-MERCAPTO-PROPYLAMINE



Mice

- (2) 450 mg/kg before irr.  
 (3) Survival in experimental group 20%; in controls 3%. (267)

3-ACETYL-2-MERCAPTOPROPYLAMINE



Mice

- (2) 450 mg/kg before irr.  
 (3) Survival in experimental group 0%; in controls 3%. (267)

ACETYLCHOLINE; cytocholin, lamizil

White mice, weight 18-20 g

- (2) S.C. 1.5 mg/mouse 5-10 min. before irr. 700 r or gamma-irr.  $\text{Co}^{60}$  1050 r.  
 (3) Survival in experimental groups was 12 and 20% respectively; all controls died. (289)

White mice, weight 22-25 g

- (2) I.P. 0.00025 - 0.0001 mg 5-25 min. before irr. 600 r (19.5 r/min).

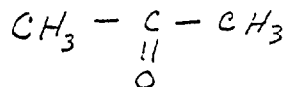
- (3) Protective effect absent. (196) See also (728).

## ACETYLCYSTEAMINE

Yeasts *Saccharomyces vini*, Megri strain 139 B

- (2)  $10^{-1}$  -  $10^{-3}$  M 15-20 min. before irr. 30, 45, and 60 kr (1000 r/min).
- (3) Concentrations  $10^{-1}$  and  $10^{-2}$  M protected from death with DRF=1.7. (185)

ACETONE; propanon, dimethylketone



Bacteria *Pseudomonas* sp.

- (2) 10% solution 6 min. before irr. in  $\text{N}_2$ .
- (3) Protected from death. (402)

Bacteria *Escherichia coli* K 12

- (2) No entry.
- (3) Did not protect from death. (634)

Mice, female, strain H

- (2) I.P. 4 mg immediately before gamma-irr.  $\text{Co}^{60}$  1000 r (38-46 r/min).
- (3) In 5 days all experimental animals died; in controls mortality was 91.7% for the same period of time. (179)

Mice, C<sub>57</sub> line

- (2) I.P. 4 ·  $10^{-5}$  M 5 min. before irr. 700 r.
- (3) Protective effect absent. (360)

## ACETONYL-ACETONE



Bacteria *Escherichia coli* K 12

- (2) No entry.
- (3) Did not protect from death. (634)

## BAL-SULFONIC ACID

Mice

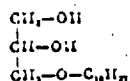
- (2) I.P. 12 mg/mouse before irr. 550-800 r.
- (3) Protective effect observed. (405)

BARBAMIL; alitinal, amythal-sodium, dorminal, sedal

White mice, male and female, weight 15-22 g

- (2) S.C. 0.1, 0.125, 0.150 mg/kg 15 min. before irr. 480-640 r.
- (3) Survival by 30th day after irr., 39, 70, 92.3% respectively; in all control groups, the survival was 5%. (244)

BATYL ALCOHOL; batilol, alpha-octadecyl ether of glycerine



Rats

- (2) S.C. after irr. 100, 250, 400 r.
- (3) Bone marrow injury was the same in experimental and control animals. (379)

PROTEIN-VITAMIN COMPLEX, BVK

- (2) As addition to ration after irr. 700 r.
- (3) Observed the normalization of metabolism in the treated animals. (221)

PROTEIN-SALT SOLUTION

Rabbits

- (2) I.V. 1 ml/kg every second day starting from the second day after irr. 1000 r (27 r/min).
- (3) Survival 80%. With administration of salt solution with glucose and vitamins, survival 47%. (241)

BENZIDINE



Paramecium caudatum

- (2) In subtoxic concentration before and during irr. 10 kr (460 r/min).
- (3) Protected very weakly against the inhibition of the division tempo. (143)

1-BENZYL-2,5-DIMETHYL-AMINOINDOLE; BAC-1

Mice

- (2) I.P. 5-10 mg/kg 30 min. before irr. 800 r.
- (3) Protective effect absent. (118)

## 1-BENZYL-2,5-DIMETHYL-5-HYDROXYTRYPTAMINE

Mice

- (2) I.P. 5-10 mg/kg 30 min. before irr. 800 r.  
 (3) Protective effect absent. (118)

Guinea pigs, male, weight 300-400 g

- (2) I.M. and internally 1, 25 and 50 mg/kg repeatedly, starting from 1st, 3rd, and 10th day after irr. 300 r.  
 (3) In dose 1 mg/kg, stimulated leukopoiesis. In doses 25 and 50 mg/kg, increased effect of radiation. (275)

## S-BENZYL-N-DIETHYL-beta-MERCAPTOETHYLAMINE

White mice

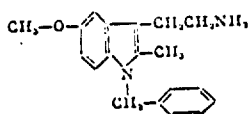
- (2) I.P. in 2-3 doses 5-15 min. before irr. 700 r.  
 (3) Out of 10 experimental animals 2-3 survived; all controls died. (311)

## N-BENZYL-beta-MERCAPTOETHYLAMINE

Mice

- (2) I.P. in few doses 5-15 min. before irr. with roentgen or gamma-rays  $\text{Co}^{60}$  in absolute lethal doses.  
 (3) Protective effect absent. (312)

1-BENZYL-2-METHYL-3-(2-AMINO-ETHYL)-5-METHOXYINDOLE HYDROCHLORIDE;  
 BAS-1, benzylantiserotonin, benanserinkhydrochloride, Wolley  
 antiserotonin

Rats

- (2) I.P.  $1.7 \times 10^{-5}$  M 5 min. before irr. 1000 r.  
 (3) Protective effect absent. (786)

## 5-BENZYLOXYTRYPTAMINE

White rats, male

- (2) I.P. 0.05 mg/kg 5 min. before irr. 900 r.  
 (3) Protective effect absent. (762)

## BENZYLTRYPTAMINE

White mice, weight 18-20 g

- (2) S.C. 0.3 mg/mouse 5-10 min. before irr. 700 r.  
 (3) Protective effect absent. (289)

## S-BENZYMIDAZOLYL-beta-MERCAPTOETHYLAMINE

White mice

(2) I.P. in 2-3 doses 5-15 min. before irr. 700 r.

(3) 4-6 experimental animals survived; all controls died. (311)

## BENZOYLOXIME

Mice

(2) No entry.

(3) (617)

## 5-BENZOXYTRYPTAMINE

White mice

(2) I.P. before irr. 700 r.

(3) Highly toxic, hardly any effect on the survival of mice. (156)

## 2-BENZOTHIAZOLYL-DIMETHYLDITHIOCARBAMATE

Mice

(2) I.P. 100 mg/kg before irr. 800 r.

(3) Insignificant increase in survival in the experimental group. (451)

## 2,2-bis-(BENZOTHIAZOLYL)-DISULFIDE

Mice

(2) I.P. 500, 1000 mg/kg before irr. 800 r.

(3) Protective effect absent. (451)

## 2-BENZOTHIAZOLYL-DIETHYLDITHIOCARBAMATE

Mice

(2) I.P. 200, 500 mg/kg before irr. 800 r.

(3) Protective effect absent. (451)

## N,N'-bis-(2-BENZOTHIAZOLYLMERCAPTOMETHYL)-UREA

Mice

(2) I.P. 20-100 mg/kg before irr. 800 r.

(3) Protective effect absent. (451)

## S-BENZTHIAZOLYL-beta-MERCAPTOETHYLAMINE

White mice

(2) I.P. in 2-3 doses 5-15 min. before irr. 700 r.

(3) From 10 experimental animals 4-6 survived; all controls died. (311)

## BENZTHIAZOL-S-MERCAPTOETHYLAMINE

Paramecium caudatum

- (2) In subtoxic concentrations with irr. 10,000 r (460 r/min).
- (3) Did not protect against inhibition of division tempo. (143)

## 3,4-BENZPYRENE

Rats, male, weight 120-140 g

- (2) S.C. 10 mg/rat in olive oil after irr. (306 r/min).
- (3) Mortality in experimental group was higher than in control group. (575) See also (572 a).

## BERBERINE

Mice, female, strain H

- (2) I.P. 0.1 mg immediately before gamma-irr. Co<sup>60</sup> 1000 r (38-46 r/min).
- (3) In 5.5 days, 58.3% of experimental animals died; in controls--63.3%. In 10 days mortality 91.7% in experimental group and in controls--100%. (179)

## BIOTIN

Mycelium Allescheria boydii 1699

- (2) Growth on synthetic medium containing 0.005 mkg/ml before irr. 100-500 kr (1810 r/min).
- (3) Had no effect on inhibition of respiration. (659)

White mice, weight 18-24 g

- (2) Internally or S.C. 0.5 - 1 mg/kg during 7-14 days before gamma-irr. Co<sup>60</sup> 700 r.
- (3) On 30th day in the experimental group 28 animals survived from 60, and in control group--17. (266)

White rats, weight 180-230 g

- (2) Internally or S.C. 0.5 - 1 mg/kg during 7-14 days before gamma-irr. 600 r., or 0.5-1.0 mg/kg from 1 to 20th day after irr. 600 r.
- (3) On 30th day with prophylactic administration 31 of 60 animals survived, in controls--24. With the administration after irr., all animals survived from 40 experimental animals, and in controls--10. (266)

Guinea pigs

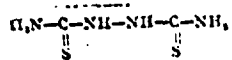
- (2) 0.1 and 0.5 mg/kg during two weeks before the start of fractional irr., 3 times a week, or during the whole period of irr., starting from the 1st day 3 times a week. Animals were irradiated 6 times a week with 10 r until the dose totaled 600 r.
- (3) Protective effect on survival absent. Only an insignificant weakening of changes in peripheral blood observed in animals that survived. (46) Also (512).

## BIOFLAVONOID COMPLEX OF LEMON

Mice, male, Webster line, weight 11-14 g

- (2) Mice were kept on special ration with addition of 2 or 4% of preparation during 6 weeks before the irr., during the period of fractional irr. and 135 days afterwards. Irr. lasted 6 weeks, 200 r per week.
- (3) Protective effect absent. (463)

## BITHIOUREA



Mice, male, Swiss line, weight 21 g

- (2) I.P. 24 mg/mouse 5 - 10 min. before irr. 900 r.
- (3) Survival 5%, in controls--2%. (753)

## BICILLIN -3.

Rats, male, weight 180 - 20 g (sic)

- (2) Administered into one of hind legs 50,000 units per rat in 0.5 ml of physiological solution on the 1st, 8th and 15th day after irr. 750 r (25.4 r/min).
- (3) From 50 experimental animals 35 survived; of 45 controls, 3. (40)

## BK-8, PROTEIN BLOOD SUBSTITUTE

Rabbits

- (2) I.V. 1.5 - 7.5 ml/kg after one hour, and then 5 days after irr. 1000 r (11.1 r/min).
- (3) Survival in experimental animals 79%; in controls, 53%. (303)

Chinchilla Rabbits

- (2) I.V. 7/5 ml/kg after one hour and then every 5 days after irr., 600-1000 r (11.1 - 14.6 r/min). After irr. experimental and control animals were deliberately wounded.
- (3) The course of radiation disease lighter; decrease of dystrophic processes in wounds. (74)

Rabbits, male, weight 2-3 kg

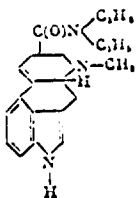
- (2) 4 ml/kg during two weeks daily, after irr. 600 r.
- (3) Restoration of leukocyte content of peripheral blood was more intensive in experimental animals than in controls. (288)

BROMINE HYDRATE OF PROPYL ESTER OF CYSTEINE

Rats, male, weight 160-210 g

- (2) I.P. 123 mg/100 g 10 min. before irr. 650 r (30 r/min).
- (3) Prevented DNA depolymerization in the liver. (132)

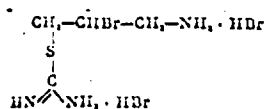
BROM-DIETHYL-AMIDE-d-LYSERGIC ACID; DELX, LSD-25



Black mice, C<sub>57</sub> line, weight 5 g, 8 days old

- (2) I.P. 5 mg/mouse and S.C. 20 mg/mouse 30 min. before irr. 550 r.
- (3) Epilatory effect of radiation the same in experimental and control animals. (710)

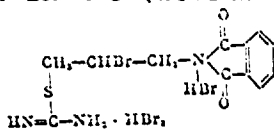
2-BROM-3-(ISOTHIURONIUM-BROMIDE)-PROPYLAMINE



White mice

- (2) I.P. 50 and 75 mg/kg 10-15 min. before irr. 700 r.
- (3) Protective effect absent. (343)

2-BROM-3-(ISOTHIURONIUM-BROMIDE)-PROPYLPHTHALMIDE



White mice

- (2) I.P. 50 and 75 mg/kg 10-15 min. before irr. 700 r.
- (3) Protective effect absent. (343)

1,2-bis-(2-BROMETHYLTHIO)-ETHANE

Mice

- (2) I.P. 50-75 mg/kg before irr. 800 r.
- (3) Protective effect absent. (451)



SODIUM BROMIDE

Rabbits

(2) 0.4 g 1 hour, and one day, after irr. 1000 r.

(3) Protective effect absent. (246)

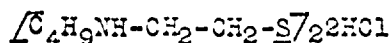
BUTANE-1,2,3,4-TETRACARBOXYLIC ACID

Mice, female

(2) I.P. 3 mM/kg 10 min. before irr. 1025 r.

(3) From 10 experimental animals one survived; all controls died. (377a)

bis-(N-BUTYLAMINOETHYL) DISULFIDE DIHYDROCHLORIDE



Yeasts Saccharomyces vini, Megri strain 139 B

(2)  $10^{-2}$  -  $10^{-4}$  M 15-20 min. before irr. 30, 45, and 60 kr (1000 r/min).

(3) Did not protect from death. (185)

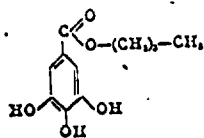
bis-(BUTYLAMINOETHYL)-SULFIDE

Mice

(2) I.P. 190 mg/kg before irr. 800 r.

(3) Protective effect absent. (451)

BUTYLGALLATE



Mice, rats

(2) Administration of 0.75% solution on phosphate buffer 30-60 min. before irr.

(3) Survival by 3rd day after irr. 50%; in controls, 2-0%. (79)

Mice

(2) 60 mg/kg 30 min. before irr. 600 r.

(3) Survival in experimental group--50%; in controls--1.6%. (78a)

Mice

(2) Before irr. with absolute lethal dose.

(3) Survival in experimental group 50%. (78)

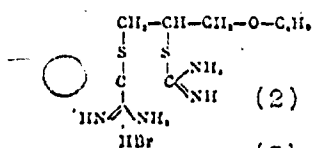
S-BUTYL-beta-MERCAPTOETHYLAMINE

White mice

(2) I.P. in 2-3 doses 5-15 min. before irr. 700 r.

(3) Protective effect absent. (311)

BUTYL ETHER - 2,3-DI-(ISOTHIURONIUMBROMIDE)-OF PROPANOL

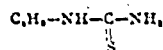


White Mice

(2) I.P. 25 and 50 mg/kg 10-15 min. before irr. 700 r.

(3) Protective effect absent. (343)

p-BUTYLTHIOUREA



White mice

(2) I.P. 100-30 mg/kg before irr. 800 r.

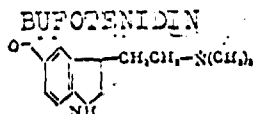
(3) Protective effect absent. (451)

5-BUTOXYTRYPTAMINE

White mice

(2) I.P. before irr. 700 r.

(3) Highly toxic, had almost no effect on the survival of irradiated mice. (156)

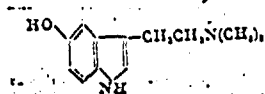


Mice

(2) 45 mg/kg before irr.

(3) Protective effect absent. (718)

BUFOTENIN; 5-oxyindolyylethyl-di-methylamine



Mice

(2) 58 mg/kg before irr.

(3) Protective effect absent. (718)

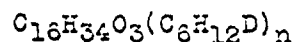
TYPHOID-PARATYPHOID VACCINE

Mice, female, Bagg Swiss line, weight 20-25 g

(2) I.P. 0.5 ml/mouse 24 hours before irr. 800 r.

(3) Survival on 30th day after irr. 10%; all controls had died by 21st day. (725)

VINYLIN; Shostakovskiy's balsam, polyvinylbutylester



White rats

(2) Internally and S.C. 0.004 - 0.01 mg 5 days before irr. 800 r and during 30 days after it.

- (3) Mortality of experimental animals 72.5  $\pm$  7.0%; in controls mortality 95.0  $\pm$  7.8%. (300)

#### VINYL PYRROLIDONE

Yeasts *Saccharomyces vini*, Megri strain 139 B

- (2) 2% after gamma-irr.  $\text{Co}^{60}$  37.5-75 kr (1250 r/min).  
 (3) Protected from death. Possibility for "grafting" of polymers on yeast cells. (148)

#### VINYLCYSTEAMINE HCl

Yeasts *Saccharomyces vini*, Megri strain 139 B

- (2)  $10^{-2}$  M 15-20 min. before irr. 30, 45, and 60 kr (1000 r/min).  
 (3) Did not protect from death. (185)

VITAMIN B<sub>1</sub>; anevrin, arkavit B<sub>1</sub>, beaktin, benervit, benervin, bezin, betabion, betamin, betan, betavitan, betaksan, bevitrol, bital, bivitin, bivitinal, orizamin, tiamol, torulin, farmanevrin

White mice, weight 18-24 g

- (2) I.V. or S.C., 10-25 mg/kg during 7 days before gamma-irr. 700 r or 1 mg/kg from the first to the 10th day after irr. 400 r, or only internally 10 mg/kg during 7 days before and 10 days after gamma-irr. 550 r.  
 (3) With prophylactic administration, 37 experimental animals out of 60 survived to the 30th day; from 60 controls, 28. With administration after irradiation 8 experimental animals out of 20 survived; from 30 controls, 9. With therapeutic-prophylactic administration from 34 experimental animals out of 60 survived; from 60 controls, 22. (266)

Mice, male, strain H

- (2) I.M. and I.V. immediately before gamma-irr.  $\text{Co}^{60}$  1000 r (38-46 r/min).  
 (3) After 7.5 days the mortality in experimental groups was 75%, and in controls, 83.3%. On 10th day after irr. all the experimental and control animals were dead. (179)

Mice

- (2) After irr. 700 r.  
 (3) Protective effect absent. (547)

Mice F<sub>1</sub>

- (2) Irr. 800 r.  
 (3) Increase in survival. (513) See also (95a, 512).

White rats, weight 180-230 g

- (2) S.C. or internally 10-25 mg/kg during 7 days before gamma-irr. 600 r.  
 (3) From 40 experimental animals 16 survived on the 30th day, and from 40 controls, 12. (266) See also (301a).

VITAMIN B<sub>2</sub>: betavitam, beflavit, vitamin G, vitaflavin, ribovin, riboderm, riboflavin, flavitol, farmflavin

White mice, weight 18-24 g

- (2) I.P. 0.5 mg/kg during 5 days before irr., internally  
1 mg/kg during 10 days before irr. 430 r.
- (3) Protective effect absent. (266)

Mice, male, strain H

- (2) I.P. 2 mg immediately before gamma-irr. Co<sup>60</sup> 1000 r  
(38-45 r/min).
- (3) In 7.5 days after irradiation all experimental and control animals had died. (179)

Mice

- (2) Irr. 680-800 r.
- (3) Protective effect absent. (512)

VITAMIN B<sub>6</sub>: bedoxin, benadon, hexapirial, piridoxol, pirivitol, suprabion, farmadoxin

Bacteria Escherichia coli

- (2)  $1 \times 10^{-3}$  M before irr. 0-9 krad ( $3 \times 10^5$  rad in an hour)  
in the air and in N<sub>2</sub>.
- (3) Did not protect from death, either in the air or in  
N<sub>2</sub>. (405)

Mice, male, strain H

- (2) I.P. 1 mg immediately before gamma-irr. Co<sup>60</sup> 1000 r  
(38-46 r/min).
- (3) In 5.5 days after irradiation all experimental and control animals had died. (179)

Mice

- (2) I.P. 5-10 mg/mouse 5-10 min. before irr. 500-800 r.
- (3) Protective effect absent. (405)

White mice, weight 18-24 g

- (2) Internally or I.P. 1-5 mg/kg during 4-10 days before irr.  
with gamma-rays Co<sup>60</sup> 700 r.
- (3) Of 60 experimental animals, 37 survived on the 30th day,  
in controls--20. (266)

White rats, weight 180-230 g

- (2) Internally or I.P. 1-5 mg/kg during 7-10 days before irr.  
or 0.4-2 mg/kg from the first to 10th day after irr., or  
internally 1 mg/kg during 7 days before and after irr.,  
from the 1st to 5th day, from 20th to 25th. Irr. dose 600 r.
- (3) Of 60 experimental animals, 35 survived with prophylactic  
administration, in controls--24; with administration after

irr., of 40 experimental animals 18 survived, in controls--12; with therapeutic-prophylactic administration, of 80 experimental animals 46 survived, in controls--24. (266)

#### Rats

- (2) I.M. daily 1 mg/rat after gamma-irr. 400-800 r.
- (3) Normalization of protein metabolism and of tissue permeability. (100)

#### Guinea pigs, dogs

- (2) Before and after chronic irr., with summary dose 500-600 r.
- (3) Regeneration in the blood-forming organs of experimental animals was more intensive. (45)

#### Rabbits, male, weight 2.5 kg

- (2) I.M. 3 mg/kg daily, during 8 days before irr. 1000 r.
- (3) The experimental animals were examined one day after irradiation. In the majority of cases post-radiation changes in lipoprotein content of liver mitochondria and in phospholipids of blood serum were either prevented or decreased. (210)

#### Rabbits

- (2) I.M. 3 mg/kg daily, during 8 days before irr. 1000 r.
- (3) In experimental animals a smaller increase in blood serum cholesterol and in blood serum phosphatide. (209)  
See also (512, 660).

VITAMIN B<sub>12</sub>; bedoksil, bedumil, bendegen, berubin, bevidoks, beksitab, betivan, kobalin, cebalamine, cebaltren, eritsitel, formin, grizovit, megabion, milevit, normetsitin, parnevit, pedizol, reticulogen, rubramin, vibiken

#### Mice

- (2) I.M. at 10 gamma from 15th day after irr. 675-750 r.
- (3) Protective effect absent. (788)

#### Mice

- (2) 0.1 - 0.15 mg immediately before irr., and after single irr., and daily before or after each seance with fractional irr. Doses of single irr. were 300, 700, and 800 r or fractional - 1000 (100 r on alternate days).
- (3) In groups receiving preparation before and after single irradiation, or after each seance of fractional irradiation, protective effect absent. With administration before each seance of fractional irradiation the survival in experimental group was 25%, in controls--10%. (564) See also. (140a, 524, 547, 583).

Rats, male, weight 180-200 g

- (2) Administered into one of hind legs 4 mg/rat 5 gamma on alternate days during 20 days after irr. with 750 r dose (25.4 r/min).
- (3) Of 20 experimental animals 2 survived, from 45 controls--3. (40)

White rats

- (2) During the period of fractional irr., 50 gamma daily, up to total dose of 600 gamma. Single dose of irr. 300-500 r, total dose 1400 r.
- (3) Blood changes less marked in experimental animals; the course of illness lighter. (607)

Guinea pigs, weight 500-600 g

- (2) I.M. 10-40 mg on alternate days, during one week after irr. 500 r.
- (3) DNA content of bone marrow on the 7th day after irradiation smaller in experimental animals than in controls. Spleen DNA and RNA contents were the same in both groups. (344) See also (45).

Rabbits, weight 2-2.5 kg

- (2) During 8 days before irr., 5 gamma/kg, total irr. dose 425 r (22.4 r/min).
- (3) Stimulation of absorptive power of reticulo-endothelial system and of skin bactericidal function. Improvement in morphological composition of peripheral blood. (60)

VITAMIN C, ascorbic acidPhase I 2

- (2) 1% before irr. 15,000-500,000 r (30,000 r/min), in the presence or absence of  $O_2$ .
- (3) Protection from death not dependent on the presence of  $O_2$ . Survival with 500,000 r increased from 0.001 to 1%. (608)

Human erythrocytes

- (2)  $3 \times 10^{-4}$  -  $6 \times 10^{-3}$  M in phosphate buffer before or after 60 min. of irr.
- (3) Protected from hemolysis if added before irr. With addition after irr., frequently increased hemolysis. (468)

Mice, female, strain H

- (2) I.P. 15 mg immediately before gamma-irr. Co<sup>60</sup> 1000 r (38-43 r/min).
- (3) In 5.5 days after irr., all experimental animals died; in controls the mortality in the same period of time was 83.3%. (179)

White mice, female and male, weight 18-20 g

- (2) 40 mg/mouse before gamma irr.  $\text{Co}^{60}$  900 r.
- (3) Protective effect absent. (24) See also (213a, 188a, 465a, 512).

VITAMIN P; vitamin  $\text{C}_2$

White rats

- (2) Internally 5 mg 5 days before and 30 days after irr., 600 r (315 r/min), or with gamma-irr.  $\text{Co}^{60}$  750 r (150 r/min).
- (3) Mortality of experimental animals corresponded to  $63 \pm 11.1\%$  and  $55 \pm 10.6\%$ ; in controls--mortality  $96 \pm 3.4\%$  and  $70 \pm 10.2\%$ . (300)

White rats

- (2) Internally 5 mg/100 g one hour, or 24 hours before irr., or during 7 days after irr. 800 r.
- (3) With administration before irr., no effect on capillary resistance; with the administration after irr., capillary resistance increased. (322) See also (213a, 225a).

VITAMIN  $\text{P}_4$ ; trioxyethylrutozyd

$\text{C}_{33}\text{H}_{42}\text{O}_{19}$

Rabbits

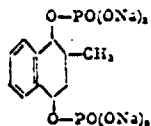
- (2) I.P. 80 mg during 14 days before local irr., of skin sectors 3000 r.
- (3) Dehydrogenase activity of lactic and malic acid sharply fluctuated in irradiated sectors of the skin of control animals. In the experimental group the activity of this ferment was moderately increased. (557) -

VITAMIN PP; niacin, niacinamide, nikobion, nikogen, nikomidol, nikavit, vitamin  $\text{B}_3$ , factor PP

Mice, male, strain H

- (2) I.P. and I.V. 2 mg immediately before gamma-irr.  $\text{Co}^{60}$  1000 r (38-46 r/min).
- (3) 5.5 days after irradiation all experimental and control animals had died. (179) See also (301a, 577).

VITAMIN K; (kativ), tetrasodium salt, 2-methyl-1,4-naftohydroquinone-diphosphoric acid



Mice

- (2) S.C. or I.V. before irr. 700 r.
- (3) Of 10 experimental animals 5 survived; all controls died. (547)

Mice

- (2) No entry.
- (3) Marked protective action detected. (515) See also (524, 586).

VITAMIN K<sub>1</sub>; kanavit, metifon, fitomenausion

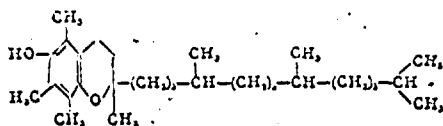
Rats with Walker carcinoma

- (2) I.V. 30 min. before local irr. of tumors 1100 r (158 r/min).
- (3) Radiosensitizing effect absent. (650a) See also (672a).

Mice, male, C<sub>57</sub> line

- (2) I.P. 1.1 mg/mouse 20 min. before irr. 500-700 r.
- (3) Survival of experimental animals was higher than in controls. (544a)

VITAMIN E; akvazol E, almefrod, vaskualz, vitazan E, vitaplex E, gonavit, teplin, tokofin, tokogen, dl-alpha-tocopherol, evitan, evitol, 6-oxy-2,5,7,8-tetramethyl-2-(4',8',12'-trimethyltridecyl)-chromate

Rabbits

- (2) Intraconjunctival administration with 3.5% solution before irr. of eye 1500 r.
- (3) Protective effect absent. (799) See also (45).

Guinea pigs

- (2) Internally, 50 mg daily, during 30 days after irr. 150 r.
- (3) Prevented development of post-radiation creatinuria. (699a) See also (479a, 672a).

VITAMIN E WATER SOLUBLE, containing 25.5% alpha-tocopherol, preparation B-883

Mice, male, CF<sub>1</sub> line, weight 20 g

- (2) I.P. 0.5 - 3.18 mg before irr., and daily after irr.
- (3) Protective effect absent. (498)



## VITELLOZIN (preparation from egg albumen)

Rabbits

- (2) During 7 days after irr. 300 r.
- (3) Observed increase in the number of leukocytes and in the percentage of granulocytes in peripheral blood. (672)

## GADOLINIUM; acids and citrates of Cd

Rats

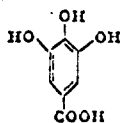
- (2) I.P. 400 mg/kg before gamma-irr.  $\text{Co}^{60}$  800 r.
- (3) Protective effect absent. (646)

## GALASCORBIN, complex preparation of vitamin C and P

White rats

- (2) S.C. 1 ml 2% solution daily after irr. 600 r.
- (3) Protective effect absent. Criteria: weight, leukopenia, autoinfection, pathohistology. (64)

## GALLIC ACID

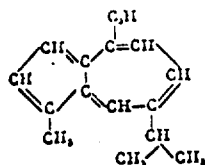
Mice

- (2) 60 mg/kg 30 min. before irr. with absolute lethal dose.
- (3) Survival in experimental group 30%. (78)

Mice and rats

- (2) 30-60 min. before irr.
- (3) On the 30th day, survival 30%; in controls--0-2%. (79)

## GUAIAZULENE; azulene, azulon, AZ-8, kessazulen, parazulen, s-guaiazulen, urozazulen, evkazulen, 1,4-dimethyl-7-isopropylazulene

White mice, female, strain H, weight 17 g

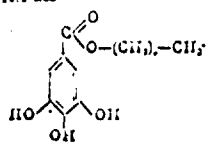
- (2) Internally, or I.P. 0.5 mg in 0.25 ml of 30% ethanol before irr. 900 r.
- (3) Average length of life 9.4 days, in controls--8.4 days. With internal administration the effect absent. (330)

## 2-HEXAMETHYLENETHIAZOLIDINE

Mice, weight 18-22 g

- (2) I.P. 6 mg/kg 10 min. before irr. 725 r.
- (3) On 30th day after irr. survival 54%; in controls--1%. (555)

## HEXYLGALLATE

Mice

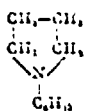
- (2) 30 min. before irr. 600 r.
- (3) Survival of experimental animals 6.4%; in controls--1.6%. (78a)

## 3-n-HEXYL-5-CARBETHOXY-CYTOSINE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).
- (3) All experimental animals died by 15th day after irr. (501a)

## N-HEXYLPYRROLIDINE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).
- (3) All experimental animals died by 25th day after irr. (301a)

## HELIUM

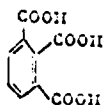
Sprouting beans Vicia faba

- (2) In the calorimetric bomb 10-40 atm. He added to 1 atm. of air and held 10 min. before, during and 5 min. after irr. 200 r (50 r/min).
- (3) With 30-40 atm. decreased growth inhibition. The speed of growth was approximately 1.5 times greater than with irr. in the air. (225)

Sprouting beans Vicia faba

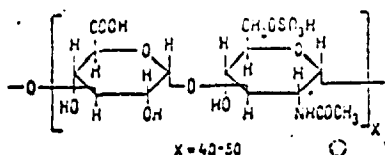
- (2) Sprouting seeds irr. with various doses in a chamber containing 2 or 4 atm. of He, with 1 atm. of air.
- (3) Did not decrease oxygen sensitization of the injured portion (criterion: growth inhibition). (457)

## HEMIMELLITIC ACID

Mice, female

- (2) I.P. 15 mm/kg 10 min. before irr. 1025 r.
- (3) Of 10 experimental animals 3 survived; all controls died. (377a)

HEPARIN; likvamin, pularin, trombolikvin, mucioitinpolysulfonic acid



#### Mice

- (2) 5 min. before irr. 675-1200 r.
- (3) Protective effect was correlated with the degree of decrease in spleen oxygen consumption. (790)

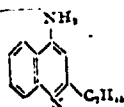
#### Rabbits

- (2) I.P. 5000 units during 14 days before local irr. of skin sectors 3000 r.
- (3) Changes in the activity of dehydrogenase of lactic and succinic acid in the irradiated skin sectors less expressed than in controls. (557)

#### Dogs, weight 10 kg

- (2) Before gamma-irr.  $\text{Co}^{60}$  150-200 r.
- (3) The investigation of fibrinolytic systems, and of histological changes in lung tissue showed an absence of protective effect. (466) See also (497).

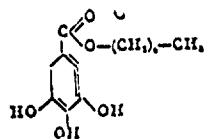
#### 2-HEPTYL-4-AMINOQUINOLINE



#### Mice, male, CF<sub>1</sub> line, weight 20-25 g

- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).
- (3) All experimental animals died by 10th day after irr. (501a)

#### HEPTYLGALLATE



#### Mice

- (2) 30 min. before irr. 600 r.
- (3) Survival 43.3%, in controls--1.6%. (78a)

#### 2-HEPTYL-4-OXYQUINOLINE

#### Mice, male, CF<sub>1</sub> line, weight 20-25 g

- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).

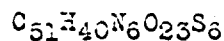
- (3) 25% of experimental animals survived by 30th day after irr. (501a)

# GERMANIUM

## Mice

- (2) No entry.  
(3) Definite protective action observed. (515)

GERMANIN; antripol, Bayer 206, bel'ganil, moranil, naganin, naganol, nafurid, suramin-sodium



## Mice

- (2) After irr. 700 r.  
(3) Protective effect absent. (547)

HEROIN; acetomorphine, diatsefin; eclorion, gerolan, morfatsetin

## Paramecium caudatum

- (2) 0.0017 and 0.0066 mg/ml 15 min. before and during irr. 100 kr. in air and in vacuum, 50 mm.  
(3) Protective effect absent. (86)

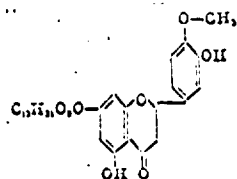
## White mice, male and female, weight 18-20 g

- (2) 3 mg/mouse at various times before gamma-irr.  $\text{Co}^{60}$  900 r.  
(3) Maximum protective effect when administered 10-40 min. before irr. (84)

## Pregnant mice

- (2) Before gamma-irr.,  $\text{Co}^{60}$  200 r.  
(3) Decrease in postnatal and intrauterine mortality, normalization of growth and decrease in number of malformations. (339)

HESPERIDIN; hersperidozid, 4'-methoxy-3',5,7-trioxyflavanone-7-rhamnoglucoside



## Mice, male, Webster line, weight 11-14 g

- (2) Addition of 2-4% of hesperidin to food ration during 6 weeks before irr., during the period of fractional irr., and 135 days after it. Irr. 6 weeks duration, 200 g per week.  
(3) Protective effect absent. (463)

## HESPERIDIN METHYLCHALCONE

Mice, male, Webster line, weight 11-14 g

- (2) Addition of 2-4% hesperidin to food ration during 6 weeks before irr., during the period of fractional irr., and 135 days after it. Irr. 6 weeks duration, 200 g per week.
- (3) Average length of life was correspondingly  $72.7 \pm 7.8$  days; in controls-- $68.6 \pm 8.2$  days. (463) See also (465a).

HYALURONIDASE; alidaza, vidaza, gialaza, gialidaza, gilaza, lidaza, spredin

Rats

- (2) S.C. 30 units during 4 days before or after local irr. 3500 r.
- (3) Changes in the activity of lactic and succinic acid dehydrogenase in the irradiated skin sectors of experimental animals expressed less than in controls. (557)

## HYALURONIC ACID

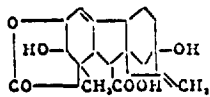
Rats

- (2) I.P. 1 ml before local irr. of abdominal area 300 r.
- (3) 24-120 hours after irr. degranulization of fat cells, amitosis and metachromasia of tissue elements. (410)

Rabbits, immunized with Breslau bacilli

- (2) S.C. 55-50 mg, 10 min.-24 hours before irr. of eyes, 800-1000 r.
- (3) The permeability of hemato-ophthalmological barrier decreased 10-15 times in comparison to controls. (144)

GIBBERELIC ACID; sodium salt of gibberelline, gibberellic acid-2,3,7-trioxy-1-methyl-8-methylengibb-4-en-1,10-dicarboxylic acid-1  $\rightarrow$  3 lactone



Potato tubers

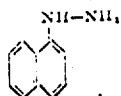
- (2) 250-500 parts for 1 min, 5 min-35 days after irr. 8000 and 12,000 rad.
- (3) With 8000 rad. germination occurred after 10 and 15 days, with 12,000 rad--after 15 and 20 days; in controls--complete inhibition of germination. (637)

## 2-HYDROZINOBENZOTHAZOLE

Mice

- (2) I.P. before irr. 800 r.
- (3) Insignificant antiradiation effect observed. (451)

1-HYDRAZINOPHTHALAZINE; apresolin, apressin, hypophthaline,  
Ba-5968, C-5968



White mice, weight 17 g

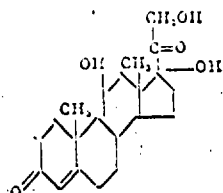
- (2) I.P. 1 mg/kg or 50 mg/kg 5, 25, and 30 min. before irr. 900 r.
- (3) Protective effect absent. (454)

#### HYDRAZODICARBOTHIAMIDE

Rats

- (2) I.P. 125 mg/kg; internally 50-750 mg/kg; 20-25 min. before gamma-irr. 600 r (572-522 r/min).
- (3) Protective effect absent. (254)

HYDROCORTISONE; henacort, cobadex, cortizol, hydrocortol, hydrocorton, pabracort, 17-oxy corticosterone



Rats, male, weight 150-225 g

- (2) 200 mg/kg, irr. abdominal area with 1500 r dose (area size--11.3 cm<sup>2</sup>). Irradiated animals were under nembutal narcosis, then trypan blue as 1% solution 0.4 mg/100 g was administered intravenously.
- (3) The permeability of intestinal vessels of experimental animals was the same as in controls 48 hours after irradiation. (816)

Rabbits

- (2) 1% salve applied to the ear before irr. 3000 r.
- (3) Observed antiinflammatory effect. (557a)

#### HYDROXYLAMINE

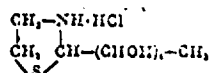
White mice, male and female, weight 18-23 g

- (2) I.P. 60 mg 5-10 min. before gamma-irr. Co<sup>60</sup> 850 r or with protons with energy 660 Mev, dose--1450-1550 rad.
- (3) Survival of experimental animals in the first group was 0.4%, in the second--44-0%; all controls died. (355)

Rats

- (2) I.P. 75 mg/kg 5-15 min. before irr. 100-400 r.
- (3) On the third day after irr. the increase in the spleen ATP-ase activity was 79% less in experimental animals than in controls; the decrease in intestinal cholinesterase activity was 29% less than in controls. (522) See also (356a).

## 2-(1,2,3,4(-HYDROXPENTYL)-THIAZOLIDINE HYDROCHLORIDE



Yeasts Saccharomyces vini, Megri strain 139 B

- (2)  $10^{-2}$  M, 15-20 min. before irr. 30, 45, and 60 kr.  
(1000 r/min).
- (3) Did not protect from death. (185)

## CASEINE HYDROLYSATE

Spores Streptomyces sp., strain T 12

- (2) In 0.2% solution during 3 hours after irr. with doses up to 100,000 r (4000 r/min).
- (3) Smaller doses (10,000 and 20,000 r) decreased, and large doses (50,000 and 100,000 r) intensified postradiation revivification observed where irradiated spores incubated in water.

## SODIUM BISULFATE

Bacteria Escherichia coli B

- (2) 0.04 M 15-20 min. with irr. 4.2 - 25.2 kr (1400 r/min) in atmosphere,  $\text{N}_2$  and  $\text{H}_2$ .
- (3) Protected from death with DRF = 3.6. DRF in controls (only anoxia)-3.0. (62)

Bacteria Escherichia coli B/r (ORNL) and Bs (Hill)

- (2) 0.02 M in physiological solution at 0-1°C 30 min. before irr. with doses up to 40 kr. in  $\text{N}_2$ .
- (3) With the background of anoxia protected only B/r strain. (430)

Mice, strain H

- (2) I.P. 10 mg/mouse before gamma-irr.  $\text{Co}^{60}$  700 r (50 r/min).
- (3) Mortality 58.4%; in controls--75%. (182)

## HYDROQUINONE



Rootlets of onion "Batun"

- (2) 0.006 M before irr. 75 r.
- (3) Did not protect against chromosome reorganization. (295)

Rats with MTK-III sarcoma

- (2) No entry.
- (3) (674).

## HYPOSULFITE

Rootlets of onion "Batun"

- (2) 1.5% solution before irr. 75 r.
- (3) Did not protect against chromosome reorganization. (295)

White mice, male and female, weight 18-20 g

- (2) 60 mg/mouse before gamma-irr. Co<sup>60</sup> 900 r.
- (3) Protective effect absent. (84)

Mice, strain H

- (2) I.P. 10 mg/mouse before gamma-irr. Co<sup>60</sup> 700 r (50 r/min).
- (3) Mortality 66.7%; in controls--75%. (182)

## HISTAMINE

Bacteria Escherichia coli 0111

- (2) 10<sup>-2</sup> and 10<sup>-3</sup> M before irr. 15 and 40 kr.
- (3) Did not protect from death. (519)

Thymocytes of rats

- (2) 10<sup>-3</sup> M 20 min. before irr. 500 r.
- (3) Did not protect from death. (494)

Human kidney cells (tissue culture)

- (2) 2.8-56 mM, 10-30 min. before irr. 500-1500 rad (200 r/min).
- (3) Did not protect from death. (802)

Mice, male and female, strain H

- (2) I.P. 5 mg 10 days before irr. Co<sup>60</sup> 1000 r (38-46 r/min).
- (3) By the 10th day after irradiation all experimental and control animals died. (179)

Black mice C<sub>57</sub>, weight 5 g, 8 days old

- (2) I.P.; S.C. 1.1 mg 5 min. before irr. 550 r.
- (3) Epilatory effect of radiation absent--general epilation in 24 out of 26 controls. (710)

Rats

- (2) Parenterally 10 gamma -/kg daily during a week before irr. 800 r.
- (3) Survival increased 18.3%. (136)

Rabbits

- (2) No entry.
- (3) (728). See also (355, 828a).



## HISTAMINECHLORIDE

Mice

- (2) 5 min. before irr. 675-1200 r.
- (3) Protective effect correlated with the degree of decrease in spleen oxygen consumption. (790)

Mice

- (2) Before irr. 700 r.
- (3) Moderate protective effect observed. (358)

Erythrocytes

- (2)  $3 \times 10^{-3}$  M before irr.
- (3) Effectively protected from hemolysis. (469)

## GLYCERINE

Phage T 1

- (2) 0-100% in water or bouillon 10 min. before irr. with dose up to 30 Mrad (50-500 kr/min) in the air and in  $\text{N}_2$ .
- (3) Optimum concentration 10M. Further increase in concentration was decreasing the effectiveness of protection. Protection was greater with smaller strength doses and did not depend on gaseous medium. (537)

Bacteria Serratia marcescens

- (2) 0.125 - 1.5 M in phosphate buffer (0.015 M) before irr. 3-15 Krad (1000 r/min) in  $\text{O}_2$  (1 and 100%), in  $\text{N}_2$  and 10%  $\text{NO}$ .
- (3) Protected from death with DRF=7; independent of  $\text{O}_2$  content and temperature. Protected from death in presence of  $\text{NO}$ . (444)

Bacteria Pseudomonas sp.

- (2) 1 M in phosphate buffer before irr. with doses up to 80 krad in  $\text{N}_2$ .
- (3) Protected from death with DRF=1.6. (445)

Bacteria Pseudomonas sp.

- (2) 0.3 - 3 M, 6 min. before irr. in  $\text{N}_2$ .
- (3) Protected from death with DRF=up to 2.3. (402)

Bacteria Escherichia coli B/r

- (2) 1 M before irr. with dose up to 60 krad with electrons 8 Mev and alpha-rays 27 and 5.2 Mev.
- (3) Protected from death with DRF=2.3; 3.2; and 2.0 respectively. (362)

Yeasts Saccharomyces cerevisiae

- (2) 6 M 10 min. before and during irr., with various doses of roentgen rays (250 r/sec), or 11 Mev protons; 30 and 39 Mev ions He, 98 and 84 Mev ions B; 101 Mev ions C; or 142 Mev ions Ne in the air or in N<sub>2</sub>.
- (3) Protective effect was less with rare ionizing roentgen rays irradiation in the air than in N<sub>2</sub>. Under irradiation with densely ionizing rays, the protective effect did not depend on gaseous medium, (832a)

Human and swine erythrocytes

- (2)  $3 \times 10^{-5}$  -  $3 \times 10^{-4}$  M in neutral solution before or after irr. (1100 r/min).
- (3) Did not protect from hemolysis. (471)

Human kidney cells

- (2) 15% 30-45 min. before irr. up to 2500 rad (344 r/min).
- (3) Protected from death with DRF=1.9. (803)

## GLYCIDYLDIMETHYLDITHIOCARBAMATE

Mice

- (2) I.P. 100 mg/kg before irr. 800 r.
- (3) 8 out of 10 experimental mice died; all controls died. (451)

## GAMMA GLOBULIN

Guinea pigs, weight 500-550 g

- (2) S.C. 30 min. after irr. or before and after irr. 500 r.
- (3) Survival in first case 50%; in the second case up to 70%. (483)

## GLUCOSE

Spores Streptomyces sp., strain T 12

- (2)  $2 \times 10^{-4}$  M during 3 hours at 37°C after irr. 50,000 r (4000 r/min).
- (3) Somewhat increased the survival and decreased the frequency of mutations. (804)

Rats, weight 115-160 g

- (2) I.P. 1 ml/100 g 5% solution during 30 days after irr. 600 r.
- (3) Protective effect absent. Criteria: dynamics of body weight, erythrocyte and leukocyte content of peripheral blood. (544)

Rabbits, immunized with Breslau bacteria

- (2) I.V. 2-3 g 10 min. before local irr. of eye 1000 r.
- (3) Effect on the permeability of hematoophthalmological barrier was not observed. (144)

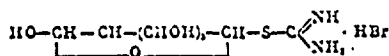
## bis-(beta-GLUCOSYLAMINOETHYL)-DISULFIDE DIHYDROCHLORIDE



Yeasts Saccharomyces vini, Megri strain 139 B

- (2)  $10^{-1}$  -  $10^{-3}$  M 15-20 min. before irr. 30, 45 and 60 kr.  
(1000 r/min).
- (3)  $10^{-1}$  and  $10^{-2}$  M concentration protected from death with  
DRF=2.2 and 2.1 respectively. (185)

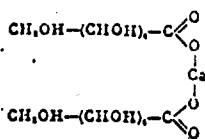
## S- GLUCOSYL-THIOUREA HYDROBROMIDE



Yeasts Saccharomyces vini, Megri strain 139 B

- (2)  $10^{-1}$  and  $10^{-2}$  M 15-20 min. before irr. 30, 45, and 60  
kr (1000 r/min).
- (3) Did not protect from death, either with toxic ( $10^{-1}$  M) or  
with subtoxic ( $10^{-2}$  M) concentration. (185)

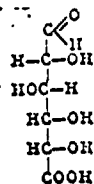
## CALCIUM GLUCONATE



Neurospora crassa

- (2) Growth in medium containing 15 mg per 10 ml. Irr.  
240-9600 r.
- (3) Decreased mortality. (809)

## GLUCORONIC ACID



Mice

- (2) Before and after irr. 550 r.
- (3) Protective and therapeutic effect observed. (583)

## GLUTAMIC ACID

Bacteria Escherichia coli B

- (2) 0.05 M immediately after irr. 16,000 r with consecutive  
30-90 minutes incubation at 37°C.

- (3) Completely prevented destruction of DNA. (585)

Erythrocytes

- (2)  $3 \times 10^{-3}$  -  $3 \times 10^{-2}$  M before irr.  
 (3) With concentration  $3 \times 10^{-2}$  M protected from hemolysis.  
 (469) See also (555).

1-GLUTAMIC ACID

Rats with MTK-III sarcoma

- (2) I.P. before irr.  
 (3) Increased mitotic activity of sarcomatous tissue. (674)

$\alpha$ -GLUTAMIC ACID

- (2) No entry.  
 (3) No entry.

GLUTATHIONE

Bacteria Escherichia coli 0111

- (2)  $10^{-2}$  and  $10^{-3}$  M before irr. 15 kr and 40 kr.  
 (3) Increase of survival observed. (519)

Microbracon hebetor(say)

- (2) Females fed 2.5% solution before irr. 2500 r (2500 r/min),  
 or two doses at 2500 r each with 4 hour interval, during  
 which they were incubated at 30°C.  
 (3) Increased laying of eggs and hatching but only on the 3-12  
 day after irr. Did not affect the length of life. (495)

Thymocytes of rats

- (2)  $10^{-3}$  M 20 min. before and after irr. in vitro 500 rad.  
 (3) Survival rose from 45 to 70%. (494)

Human and swine erythrocytes

- (2)  $3 \times 10^{-2}$  and  $3 \times 10^{-4}$  M in neutral solution before and  
 after irr. (1100 r/min).  
 (3) Protected from hemolysis when added before, but not  
 after, irr. (471)

Rats

- (2) I.P. 5-15 min. before irr. 100-400 r.  
 (3) On the third day after irradiation, the increase in the  
 activity of spleen ATP-ase was 26% less than in controls.  
 Decrease of activity of intestinal cholinesterase was 42%  
 less than in controls. (522)

Rabbits

- (2) I.V. 1 and 2 g 1 hour before irr. of eyes 1500 r.

- (3) Protective effect was observed only with 2 g dose. (799)

Rabbits, male, weight 2.7-3 kg

- (2) I.V. 4000 mg/kg 5 min. before irr. of head 800, 2240, and 6000 r.
- (3) With irr. of 800 r a decreased damaging effect of radiation on conjunctiva, crystalline lens, and iris was observed. With 2400 and 6000 r the protection was manifested only by lesser changes in the activity of succindehydrase and cytochromoxidase of the eye. (759) See also (583, 759, 760).

GLUTATHIONE -SH

Yeasts Saccharomyces vini

- (2)  $10^{-4}$  -  $10^{-7}$  M/ml during gamma-irr.  $\text{Co}^{60}$  5-100 kr.
- (3) Delayed death of dividing cells corresponding to concentrations. (48)

White mice, male and female, weight 13-20 g

- (2) 25 mg/mouse at various times before gamma-irr.  $\text{Co}^{90}$  900 r.
- (3) Protective effect detected. (84)

White rats

- (2) S.C. 60 mg during 4 days before irr. 550 r.
- (3) Nucleic acids content in organs (with exception of spleen) changed less in experimental animals than in controls. (640)

Rats

- (2) I.P. 900 mg/kg 5-15 min. before irr. 400 r.
- (3) Changes in the activity of spleen ATP-ase and of small intestine cholinesterase were less expressed in experimental animals. (522)

HOMOGENATE OF INTERNAL ORGANS OF MICE

Mice

- (2) 0.1 - 0.3 ml 24 hours before gamma-irr.  $\text{Co}^{60}$  800 r.
- (3) Survival on 40th day after irr. in experimental group 70%; in controls--30%. (365)

HOMOGENATE OF INTERNAL ORGANS OF IRRADIATED MICE

Mice

- (2) 0.1 - 0.3 ml, one week or 24 hours before gamma-irr.  $\text{Co}^{60}$  800 r.
- (3) Survival by 40th day after irr. respectively 70 and 80%; in controls--30%. (365)

BETA-HOMOCYSTEINE

Thymocytes of rats

- (2)  $10^{-3}$  M 20 min. before irr. in vitro 500 r.

- (3) Did not protect from death. (494)

Candida tropicalis

- (2) 0.005 - 0.4 M during irr. 12 500 rad beta-rays  $\text{Sr}^{90}$ .  
 (3) Effective protection only with concentration up to 0.01 M. Survival then increased 14.3-17.2%. The concentration 2 M/100 showed hardly any protection and 4 00 was toxic. (800)

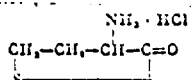
Erythrocytes

- (2)  $3 \times 10^{-3}$  M before irr.  
 (3) Protected from hemolysis. The degree of protection close to the effect of cysteine in equimolar concentration. (469)

Human and swine erythrocytes

- (2)  $3 \times 10^{-3}$  -  $3 \times 10^{-4}$  M in neutral solution before or after irr. (1100 r/min).  
 (3) Protected from hemolysis when added before, but not after irr. (471) See also 809a).

HOMOCYSTEINETHIOLACTONE HCl



Bacteria Escherichia coli 0111

- (2)  $10^{-3}$  and  $10^{-2}$  M before irr. 15 and 40 kr.  
 (3) Survival increased, instead of 50%--up to 72%, and instead of 0%--up to 17%. (519)

Candida tropicalis (Cast)

- (2) 0.005 - 0.04 M during irr. 12 500 rad beta-rays  $\text{Sr}^{90}$ .  
 (3) Some protective effect observed with 0.01 M. Larger concentrations had toxic effect. (800)

Mice, weight 16-18 g

- (2) Parenterally 10 min. before or internally 30 min. before irr. 550 r.  
 (3) Survival at 28th day after irr.: 17.2%. Administration of cysteine produced 12% survival. (398)

GRAMICIDIN

Yeasts Saccharomyces vini, Megri strain 139 B

- (2)  $10^{-4}$  M in 5% alcohol before, during or after irr. 80 kr. gamma-rays  $\text{Co}^{60}$  in air, in  $\text{O}_2$ , or in vacuum.  
 (3) Added before irr., protected from death in the presence as well as in the absence of  $\text{O}_2$ . (157a) See also (583).

GREBESHOK DAL'NEVOSTOCHNYY (FAR EAST COMB) (dry preparation from mollusks)

Rats, dogs

- (2) Internally 0.5 g/rat and 4.0 - 6.0 g/dog during 14 days or 30-40 days before gamma-irr. of rats with 550-750 r, and dogs with 550 r. For therapeutic purposes during the period of irradiation in subacute injuries, or during 14 days after irradiation in acute injury.
- (3) Protective and therapeutic effect absent. (316)

GUANIDINE

Cells of Erlich ascites carcinoma

- (2) 0.1 - 0.2 mg/ml after irr. in vitro 800 r (477 r/min).
- (3) Did not decrease the number of chromosome aberrations. (340)

GUANIDINE PHOSPHATE

White mice, male, weight 18-20 g

- (2) Internally 0.025 g/mouse 30 min. before gamma-irr.  $\text{Co}^{60}$  700 r immediately or 30 min. after irr. For therapeutic purposes on the 1st, 3rd, 5th, and 7th day of illness.
- (3) Survival in groups of experimental animals was 9-10%; in controls--5%. (42)

alpha-GUANIDINOCINNAMIC ACID

Mice

- (2) I.P. 500, 1000 mg/kg before irr. 800 r.
- (3) Protective effect absent. (451)

bis-beta-GUANIDOETHYLDISULFIDE; GED

Yeasts *Saccharomyces vini*, Megri strain 139 B

- (2)  $10^{-1}$  -  $10^{-3}$  M 15-20 min. before irr. 45 and 60 kr (1000 r/min).
- (3) Protected from death with DRF up to 2.0. (185)

Mice, male, C<sub>57</sub>BL/6 line, 10 weeks old

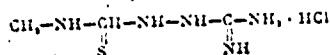
- (2) I.P. 100, 140, and 200 mg/kg 10-15 min. before irr.; internally 400 mg/kg 30 min. before irr.
- (3) LD<sub>50/30</sub> in controls 668  $\pm$  10 r; in experimental groups respectively 818  $\pm$  30, 917  $\pm$  14, 929  $\pm$  10 and 836  $\pm$  9 r. (738)

GUANYLAZIDE NITRATE

White mice, male, weight 18-20 g

- (2) Internally 0.01 g/mouse 1 hour before gamma-irr.  $\text{Co}^{60}$  700 r immediately or 30 min. after irr.
- (3) Survival 9-10%, in controls--5%. (42)

## 1-GUANYL-4-METHYL-3-THIOSEMICARBAZIDE HYDROCHLORIDE



Mice, male, Swiss line, weight 21 g

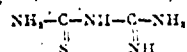
- (2) I.P. 30 mg/mouse 5-10 min. before irr. 900 r.  
 (3) Survival 12%, in controls--2%. (753)

## GUANYLUREA-TOLUENE-p-SULFONATE

Mice, male, Swiss line, weight 21 g

- (2) I.P. 12 mg/mouse 5-10 min. before irr. 900 r.  
 (3) Survival 8%; in controls--2%. (753)

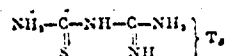
## GUANYLTHIOUREA; GTU



Mice, male, Swiss line, weight 21 g

- (2) I.P. 20 mg/mouse 5-10 min. before irr. 900 r.  
 (3) Survival 45%; in controls--2%. (753)

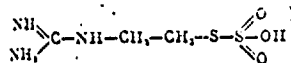
## GUANYLTHIOUREA-TOLUENE-p-SULFONATE



Mice, male, Swiss line, weight 21 g

- (2) I.P. 35 mg/mouse 5-10 min. before irr. 900 r.  
 (3) Survival 66%, in controls--2%. (753)

## GUANYLETHYLTHIOSULFURIC ACID

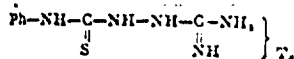


Yeasts Saccharomyces vini, Megri strain 139 B

- (2)  $10^{-1}$  --  $10^{-4}$  M 15-20 min. before irr. 30, 45, and 60 kr (1000 r/min).  
 (3)  $10^{-2}$  and  $10^{-3}$  M protected from death with DRF=1.7, and  $10^{-1}$  and  $10^{-4}$  M--with DRF=1.5. (185)



## 1-GUANYL-4-PHENYL-3-THIOSEMICARBAZIDE-TOLUENE-p-SULFONATE

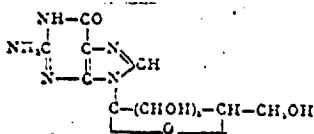


Mice, male, Swiss line, weight 21 g

(2) I.P. 20 mg/mouse 5-10 min. before irr. 900 r.

(3) Survival 29%, in controls--2%. (753)

GUANOSINE; vernin, guanine riboside

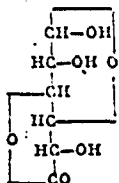


Rats with Walker carcinoma

(2) I.V. 30 min. before local irr., of carcinoma with 1100 r (158 r/min).

(3) Radiosensitizing effect absent. (650a)

GURONZAN; dikuron, glucurolacton, glucuron, glucuronolactone, gluronzan, gamma-lactone-alpha-glucofuranuronic acid



Mice, male

(2) Immediately after irr. 550 r (18.6 r/min).

(3) Changes in DNA and RNA content of liver cells were the same in experimental and control animals. (584)

Mice

(2) No entry.

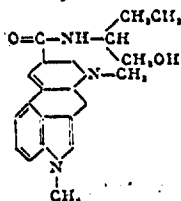
(3) Insignificant protective effect. (515)

Rabbits

(2) Before irr. 100-1000 r.

(3) Inhibition of serum cholinesterase in the second week after irradiation was identical in the experimental and control animals. (458)

DESERIL; metizergid, UML 491, methylene derivative of alpha-lysergic acid; butanolamide-1-methyl-D-lysergic acid



White mice, weight 17 g

- (2) S.C. 10 mg/kg 30 min. before irr. 750 and 900 r.
- (3) Protective effect absent. (454) See also (454a).

## DESOXYADENYLIC ACID

Mice

- (2) 2-24 hours after irr. 500-600 r.
- (3) Mitotic index of bone marrow was higher in experimental animals than in controls. (747a)

## 2-DESOXY-alpha-GLUCOSE

Ehrlich ascites carcinoma

- (2) I.P. 0.2 ml/mouse 5% solution 15 min. before local irradiation of tumors.
- (3) Radiosensitivity of tumors increased. (755)

## DESOXYGUANYLIC ACID

Mice

- (2) 2-24 hours after irr. 500-600 r.
- (3) Mitotic index of bone marrow was less than in controls. (747a)

DESOXYCORTICOSTERONE-ACETATE; DCA, arcort, articocortal, artrizon, cortezan, corticon, corticosteron, cortifar, cortigen, cortinak, cortizal, cortisteryl, cortisteron, cortiviz, cortiksyl, cortolipeks, decort, decorten, descorteron, descortin, desocort, dorcostrin, doksikomon, glossosincortil, crinocort, leocortex, medicosteron, neocortin, okritan, perkotol, primocort, primocortan, prodecort, sincortex, sincort, sincortin, unidocan, delta-4-21-acetoxypregnen-3, 20-dion-11-desoxycorticosterone acetate

Mice, male, strain H

- (2) I.P. 1.5 - 2 mg immediately after gamma-irr.  $\text{Co}^{60}$  1000 r (32-46 r/min).
- (3) By the 10th day after irradiation all experimental and control animals died. (170)

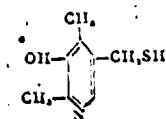
Rabbits

- (2) During 14 days daily before local irr., 3000 r.
- (3) Delayed local radiation reaction. (557)

Rabbits

- (2) S.C. 10 mg/kg or I.M. 2.5 - 5.1 mg/kg immediately after gamma-irr.  $\text{Co}^{60}$  1700 r., then daily for 30 days.
- (3) Survival identical in experimental and control groups. The preparation normalized the function of adrenals. (120) See also (145, 459).

4-DESOXY-5-MERCAPTO-PYRIDOXINE; 2,4-dimethyl-3-oxy-5-mercaptomethyl-pyridine



Mice, female

- (2) I.P. 5 mg/20 g 5 min. before irr. 700 r.
- (3) Mortality 18%; in controls--74.5%. (578)

DESOXYRIBONUCLEIC ACID from liver, high polymer

Rats

- (2) After irr. LD<sub>100</sub>/30.
- (3) Investigations on 4th and 9th day after irr. showed normalization of metabolic activity of endogenic nucleic acids in the liver and intestines. (384) See also (696, 697a).

LIVER DESOXYRIBONUCLEIC ACID, homologous

Rats

- (2) Administered to rats irradiated with lethal radiation doses.
- (3) Degenerative changes in the mucosa of stomach and small intestine, also degenerative changes in the liver were expressed in a considerably lesser degree in experimental animals than in controls. (698) See also (698a).

DESOXYCYTIDYLIC ACID

Mice

- (2) 2-24 hours after irr. 500-600 r.
- (3) Markedly increased mitotic index of bone marrow in experimental animals. (747a)

DESOXYCYTIDINE

Mice

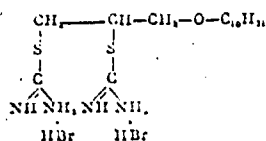
- (2) After irr. 500 r.
- (3) Accelerated the regeneration of blood forming system in experimental animals. Quantity of mitosis in bone marrow on 4th-7th day was 20-50% larger than in controls. By the 10th this difference had leveled off. (559)

DEXTRAN OF VARIOUS MOLECULAR WEIGHTS

White mice, male and female, C57 line, weight 18-22 g

- (2) I.V. 1, 10, 50, and 200 mg/kg 24 hours before irr. 700 r. and also in doses 0.1; 1; and 10 mg/kg 3 hours after irr.
- (3) Protective effect only with administration before irr., molecular weight  $1.5-3 \times 10^{-6}$  in dose 1 mg/kg. By 30th day after irr., 8 mice survived out of 20 experimental mice, and 1 out of 20 controls. (34)

## DECYL ETHER-2,3-DI(ISOTHIURONIUM BROMIDE)-PROPANOL

White mice

(2) I.P. 10-15 mg/kg 10-15 min. before irr. 700 r.

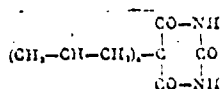
(3) Protective effect absent. (343)

## 1,3-DIALLYL-4-AMINOURACIL

Phage Ph 1. causing lysis of intestinal rod bacteria, strain 800(2) 0.01 mM in phage suspension before gamma-irr.  $\text{Co}^{60}$  5000 r (500 r/min).

(3) Survival 64.7%; in controls--0.53%. (326)

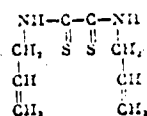
## DIALLYLBARBITURIC ACID

Phage Ph 1 causing lysis of intestinal rod bacteria, strain 800

(2) 0.01 and 0.02 mM in phage suspension before gamma-irr. 500 r. (500 r/min).

(3) Survival 38 and 61%, in controls 0.07 and 0.01%. (326)

## N,N'-DIALLYLDITHIOXYAMIDE

Mice

(2) I.P. 25 mg/kg before irr. 800 r.

(3) Survival 5-7 out of 10 mice; all controls died. (451)

## DIAMYLPHOSPHITE

White mice, female, weight 18 g(2) S.C. in alcohol solution 5 mg/kg or 12.5 mg/kg 10min. before irr. 780  $\pm$  26 r. (60 r/min).

(3) Survival 10.0 and 20%; in controls--13.3%. (178)

## 2,4-DIAMINO-6-BENZYL-AMINOPYRIMIDINE

White mice

(2) S.C. 30 and 50 mg/kg in propyleneglycol 10-15 min. before irr. 700 r.

(3) Protective effect absent. (154)

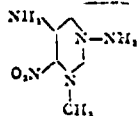
2,6-DIAMINOBENZOTHAZOLE

Mice

(2) I.P. 200-500 mg/kg before irr. 800 r.

(3) Protective effect absent. (451)

2,6-DIAMINO-5-NITRO-4-METHYLPYRIMIDINE

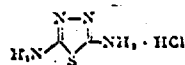


White mice, rats, rabbits

(2) Before irr.

(3) Preparation increased effect of roentgen rays. (87)

2,5-DIAMINO-1,3,4-THIADAZOLE HYDROCHLORIDE

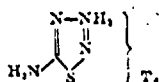


Mice, male, Swiss line, weight 21 g

(2) I.P. 30 mg/kg 5-10 min. before irr. 900 r.

(3) Survival 6%; in controls--2%. (753)

3,5-DIAMINO-1,2,4-THIADAZOLTOLUOL-P-SULFONATE

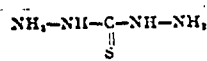


Mice, male, Swiss line, weight 21 g

(2) I.P. 7 mg/mouse 5-10 min. before irr. 900 r.

(3) Survival 69%; in controls--2%. (753)

N,N'-DIAMINOTHIOUREA



Mice

(2) I.P. 1, 3 mg/kg before irr. 800 r.

(3) Protective effect absent. (451)

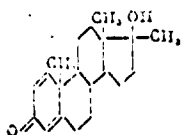
4,6-DIAMINO-1,3,5-TRIDIAZINE-2-DION

Mice

(2) I.P. 50-300 mg/kg before irr. 800 r.

(3) Protective effect absent. (451)

DIANABOL; methandienon, methandrostenolone, Ciba 17309-Bo, 17-alpha-methyl-beta-oxyandrost-1,4-dien-3-on.



#### Mice

- (2) Internally 1 mg/kg during 7 days before and 14 days after irr. with dose 300 r ( $LD_{50}$ ) or only for 14 days after irr.
- (3) Administered before and after irr., showed marked protective effect; administered only after irr., showed only insignificant effect on survival. (438)

#### Rats

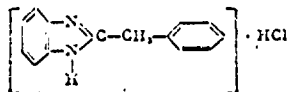
- (2) Internally 1 mg/kg during 7 days before irr. 450 r ( $LD_{100}$ ).
- (3) In experimental group all rats survived, in control group--all died. (438)

N-DIAOXTONGALACTOSO-beta-MERCAPTOETHYLAMINE

#### Mice

- (2) I.P. in few doses one of which was maximum dose 5-15 min. before irr., with roentgen-or gamma-rays  $Co^{60}$  in absolute lethal dose.
- (3) Protective effect absent. (312)

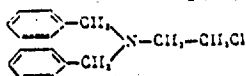
DIBAZOL; chlorhydrate-2-benzyl-benzimidazole



#### Rats

- (2) 2 mg/kg before irr. 1100 r.
- (3) Increased radio resistance. (150a)

DIBENAMINE; DBA, N,N'-dibenzyl-beta-chlorethylamine



#### Mice

- (2) 5 min. before irr. 675-1200 r.
- (3) Protective action correlated with the degree of increase in spleen oxygen consumption. (790)

#### Dogs

- (2) I.V. 5 mg/kg 15 min. before gamma-irr.  $Co^{60}$ .
- (3) Protective effect absent. (506)

## N-DIBENZYL-beta-MERCAPTO-ETHYLAMINE

Mice

- (2) I.P. in few doses 5-15 min. before irr. with roentgen or gamma-rays  $\text{Co}^{60}$  in absolute lethal doses.
- (3) Protective effect absent. (312)

## DIBENZOTHIOPHENE

Mice

- (2) I.P. 500, 1000 mg/kg before irr. 800 r.
- (3) Protective effect absent. (451)

## N-DIBUTYL-beta-MERCAPTOETHYLAMINE

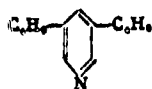
Mice

- (2) I.P. in few doses 5-15 min. before irr. with roentgen or gamma-rays  $\text{Co}^{60}$  in absolute lethal doses.
- (3) Protective effect absent. (312)

White rats

- (2) I.P. 8-10 min. before gamma-irr.  $\text{Co}^{60}$  750 r.
- (3) Protective effect absent. (256) See also (669).

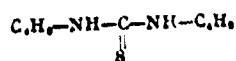
## 3,5-DIBUTYLPYRIDINE



Mice, male, C line, weight 20-25 g

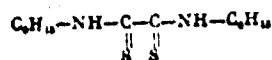
- (2) Internally 250 mg/kg 24 hours before irr., 600 r (20 r/min).
- (3) By 13th day after irr. all experimental animals died. (501a)

## N-DIBUTYLTHIOUREA

Mice

- (2) I.P. 200, 500 mg/kg before irr. 800 r.
- (3) Protective effect absent. (451)

## N,N'-DIHEXYLDITHIOXAMIDE

Mice

- (2) I.P. 100 mg/kg before irr. 800 r.
- (3) One mouse survived out of 10 experimental animals; all controls died. (451)

## DIHYDROSTREPTOMYCIN

White mice, male and female, weight 18-22 g

(2) S.C. 2-10 mg/mouse 5 min. before gamma-irr.

(3) Protective effect absent. (291)

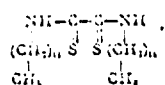
DIHYDROERGOTAMINE; diergotan, DHE-45, dihydergot, methansulfonate of dihydroergotamine

White rats

(2) 0.00033 mg daily for 5 days before or after irr., 1000 r.

(3) Survival 50%; all controls died. Administered after irr., showed no protective effect. (648)

## N,N'-DIDODECANDITHIOXYAMIDE



Mice

(2) I.P. 50 mg/kg before irr. 800 r.

(3) 2 to 4 mice survived out of 10 experimental animals; all controls died. (451)

## DIISOAMYLPHOSPHITE

White mice, female, weight 18 g

(2) S.C. in alcohol solution 200 and 250 mg/kg 10 min. before irr. 780  $\pm$  26 r (60 r/min).

(3) Survival respectively 13.3 and 20%; in controls--13.3%. (178)

## N-DIISOBUTYL-beta-MERCAPTOETHYLAMINE

Mice

(2) I.P. in few doses one of which was maximum dose, 5-15 min. before irr., with roentgen c gamma-rays Co<sup>60</sup> in absolute lethal doses.

(3) Protective effect absent. (312)

## N-DIISOPROPYL-beta-MERCAPTOETHYLAMINE

Mice

(2) I.P. in few doses one of which was maximum dose, 5-15 min. before irr., with roentgen or gamma-rays Co<sup>60</sup> in absolute lethal doses.

(3) Protective effect absent. (312)

## DIISOPROPYLFLUOROPHOSPHATE

Rats, male, weight 150-225 g

(2) I.M. 2-2.5 mg/kg 0.1% butyric solution 30 min. before irr.,



of abdominal area (size of field 11.3 cm<sup>2</sup>) 1500 r. Irr. conducted under nembutal narcosis, then trypan blue administered I.V. 0.4 ml/100 g 1% solution.

- (3) Investigation 24, 28, and 72 hours after irr., showed decreased vascular permeability of intestinal tract of experimental animals. (816)

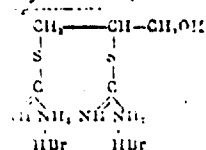
Rats, male, weight 150-225 g

- (2) I.M. 3 mg/kg 0.1% solution in peanut oil before irr., immediately or 24 hours after irr. 1050, 1334, and 2200 r.
- (3) Administered before irr., 1050 r survival 42%; immediately after irr., 42%, in controls--0-17%. Administered before irr., 1334 r. survival 25%, and with administration 24 hours after irr., survival 25%, in controls--0%. Administered before irr., 2200 r, survival 8%, in controls--0%. (817)

Rats

- (2) 3 mg/kg before irr. 975 r.
- (3) In experimental group 20% of animals died with symptoms of injury to gastro-intestinal tract; in controls--60%. (818)

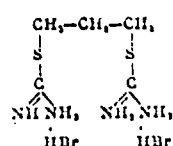
1,3-DI-(ISOTHIURONIUMBROMIDE)-PROPANOL



White mice

- (2) I.P. 15 mg/kg 10-15 min. before irr. 700 r.
- (3) Protective effect absent. (343)

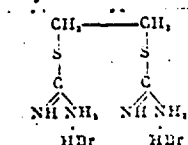
1,3-DIISOTHIURONIUMPROPANE



White mice

- (2) I.M. 75 and 100 mg/kg 10-15 min. before irr. 700 r.
- (3) Survival in experimental groups 10 and 30% respectively; in controls--0%. (343)

1,2-DIISOTHIURONIUMMETHANE



White mice

- (2) I.P. 50 and 37.5 mg/kg 10-15 min. before irr. 700 r.
- (3) Survival 10 and 0% respectively; in controls--0%. (343)

## 2-(3,5-DIIODO-4-PYRIDIN)-2-MERCAPTOACETIC ACID

Mice

(2) No entry.

(3) (451).

## DIMEDROL

Mice, female, H strain(2) I.P. 2 mg before gamma-irr.  $\text{Co}^{60}$  1000 r (39-46 r/min).

(3) Within ten days after irr., all experimental and control animals died. (179)

White rats, weight 170-200 g

(2) I.M. 5 mg/kg twice daily during first 6 days after polonium 210 poisoning calculating 0.05 - 0.065 mcurie kg.

(3) Notwithstanding the fact that polonium elimination was inhibited by 13.9%, the survival of experimental animals was identical with controls. (237)

Rats(2) I.V., I.P., and S.C. 5-25 mg/kg during two weeks after irr., 800 r ( $\text{LD}_{100/30}$ ).

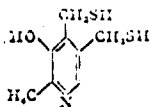
(3) The therapy, not affecting the survival, promoted lesser weight loss and the normalization of blood pressure. (95)

Dogs

(2) I.V. 2-3 mg/kg once a day during first 20 days after irr. 500 r.

(3) Clinical symptoms of hemorrhagic diathesis lessened, capillary permeability and blood coagulation disorders decreased. (95)

## 4,5-DIMERCAPTOPYRIDOXIN; 2-methyl-3-oxy-4,5-dimercaptomethylpyridine

Bacteria Escherichia coli B/r(2)  $10^{-5}$  M before irr. 0-10 krad ( $3 \times 10^{-5}$  rad/hour) in air and in  $\text{N}_2$ .

(3) Protected from death the anaerobic, but did not protect the aerobic and anoxic suspensions. (405)

Mice, female

(2) I.P. 1 mg/20 g 5 min. before irr. 700 r.

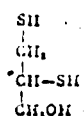
(3) Mortality 76%, in controls--74.5%. (578)

Mice

(2) I.P. 1 mg/mouse 5-10 min. before irr. 500-800 r.

(3) Protective effect absent. (405)

2,3-DIMERCAPTOPROPANOL; BAL, dimercaptol, dicaptol, dimerzol, dithioglycerine, mercaptol, panobal, sulfatin



Bacteria Escherichia coli 0111

- (2)  $10^{-2}$  and  $10^{-3}$  M with irr., 15 and 40 kr.
- (3) Survival increased; from 50 to 95%, from 0 to 15%. (519)

Human and swine erythrocytes

- (2)  $3 \times 10^{-4}$  M in neutral solution before or after irr. (1100 r/min).
- (3) Protected from hemolysis. (471)

Seeds of beans Vicia faba

- (2)  $2 \times 10^{-3}$  M 15-30 min. before and during irr., with fractional doses up to 1000 r (200 r/min).
- (3) Decreased the number of two-hit chromosome aberrations, as well as the inhibition of reunion of chromosome breakdowns, caused by the first and second dose of irr. (820a) See also (820b).

Rabbits

- (2) Interconjunctival injection of 6% butyric solution before eye irr. 1500 r.
- (3) Protective effect absent. (799) See also (674a).

DIMERCAPTOPROPIONIC ACID

White mice, male and female, weight 18-20 g

- (2) 0.75 and 1 mg/mouse at various times before gamma-irr.  $\text{Co}^{60}$  900 r.
- (3) Protective effect with administration 180-10 min. before irr. Maximal protective effect when administered 15 min. before irr. (84)

White mice, male and female, weight 18-21 g  
8-12 weeks old

- (2) S.C. 0.75 mg/mouse before gamma-irr.  $\text{Co}^{60}$  900 r. (375 r/min).
- (3) Survival 55%; all controls died. (83)

2,5-DIMERCAPTO-1,3,4-THIADIAZOLE

Mice

- (2) I.P. 50, 100 mg/kg before irr. 800 r.
- (3) Protective effect absent. (451)

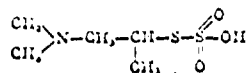
## MEZO-2,3-DIMERCAPTOSUCCINIC ACID

Guinea pigs

(2) 10 mg/kg before irr.

(3) Mortality 60% less than in controls. (435)

## beta-DIMETHYLAMINOISOPROPYLSULFURIC ACID

Yeasts Saccharomyces vini, Megri strain 139 B(2)  $10^{-2}$  M 15-20 min. before irr. 30, 45, and 60 kr (1000 r/min).

(3) Did not protect from death. (185)

1-DIMETHYLAMINO-N-METHYL-22-DIPHENYL-VALERAMIDE-N<sup>4</sup>-OXIDEMice, male, CF<sub>1</sub> line, weight 20-25 g

(2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).

(3) Survival of experimental animals was not substantially different from the survival of controls. (474a)

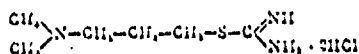
## 2-(N,N'-DIMETHYLAMINO-PROPYL)-4,5-DICHLORDIPHENYLSULFIDE MONOHYDROXYCHLORIDE

Mice

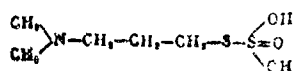
(2) I.P. 50, 75 mg/kg before irr. 800 r.

(3) Protective effect absent. (451)

## S-(gamma-DIMETHYLAMINOPROPYL)-THIOUREA DIHYDROCHLORIDE

Yeasts Saccharomyces vini, Megri strain 139 B(2)  $10^{-2}$  -  $10^{-4}$  M 15-20 min. before irr. 30, 45, and 60 kr. (1000 r/min).(3) Did not protect from death either with toxic ( $10^{-2}$ M) or with subtoxic concentration. (185)

## gamma-DIMETHYLAMINOPROPYLSULFURIC ACID

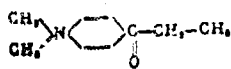


Yeasts Saccharomyces vini, Megri strain 139 B

(2)  $10^{-2}$  M 15-20 min. before irr. 30, 45, and 60 kr (1000 r/min).

(3) Did not protect from death. (185)

p-DIMETHYLAMINOPROPIOPHENONE (in propylene glycol)



White rats, male, weight 200-240 g

(2) I.P. 0.175 g/kg 10 min. before irr. 650 r.

(3) Survival 40%; in controls--5%. (269)

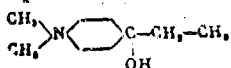
1,3-DIMETHYL-4-AMINOURACIL-5-ISOTHIURONIUM BROMIDE

Phage Ph 1 causing lysis of intestinal rod bacteria, strain 600

(2) 0.01 mM in phage suspension with gamma-irr. 5000 r (500 r/min).

(3) Survival 2-6.7%; in controls--0.03-0.4%. (326)

p-DIMETHYLAMINOPHENYLPROPANOL-1 (in propyl glycol)

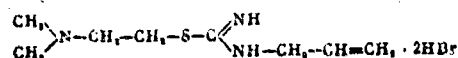


White rats, male, weight 200-240 g

(2) I.P. 0.350 g/kg 10 min. before irr. 650 r.

(3) Protective effect absent. (269)

S-(beta-DIMETHYLAMINOETHYL)-N-ALLYLTHIOUREA DIHYDROBROMIDE



Yeasts Saccharomyces vini, Megri strain 139 B

(2)  $10^{-2}$  M 15-20 min. before irr. 30, 45, and 60 kr (1000 r/min).

(3) Did not protect from death. (185)

alpha-DIMETHYLAMINOETHYL-1-METHYL-3-INDOLEMETHANOL

Mice, male, CF<sub>1</sub> line, weight 20-25 g

(2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).

(3) Protective effect absent. (501a)

2-[(2-DIETHYLAMINOETHYL)-(p-METOXYBENZYL)-AMINO] PYRIMIDINE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

(2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).

(3) Protective effect absent. (501a)

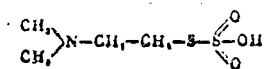
## 2-[(2-DIMETHYLAMINOETHYL)-p-METHOXYBENZYL]-AMINO-7-PYRIMIDIN-N-OXIDE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

(2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).

(3) By 28th day after irr., all experimental animals died. (501a)

## beta-DIMETHYLAMINOETHYLTHIOSULFURIC ACID



Yeasts Saccharomyces vini, Megri strain 139 B

(2)  $10^{-2}$  M 15-20 min. before irr. 20, 45, 60 kr (1000 r/min).

(3) Did not protect from death. (185)

## 2-DIMETHYLAMINOETHYLTHIOSULFONIC ACID

Mice, weight 18-22 g

(2) I.P. 5 mg/kg 10 min. before irr. 725 r.

(3) Survival by 30th day after irr., 57%; in controls--1%. (555)

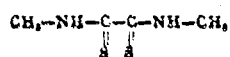
## 1,3-DIMETHYLBARBITURIC ACID

Phage Ph 1 causing lysis of intestinal rod bacteria, strain 600

(2) 0.01 mM in phage suspension with gamma-irr. 5000 r (500 r/min).

(3) Protective effect absent. (326)

## N-N'-DIMETHYLDITHIOOXAMIDE



Mice

(2) I.P. 25 or 50 mg/kg before irr. 800 r.

(3) 2-4 mice survived out of 10 experimental mice; all controls died. (451)

## DIMETHYLDITHIOCARBAMATE DIMETHYLAMMONIA

Mice

(2) I.P. before irr. 750-800 r.

(3) In experimental group mortality two times less than in controls. (451)

## N-DIMETHYLMERCAPTOETHYLAMINE

Thymocytes of rats

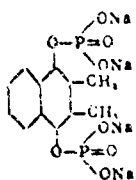
(2)  $10^{-3}$  M 20 min. before and after irr. in vitro 500 rad.

(3) Survival increased from 48 to 70%, protection when administered after irr., is considered not significant by the authors. (494)

Mice

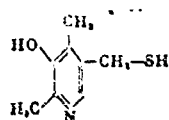
- (2) I.P. in some doses, one of which was maximum dose, 5-15 min. before irr. with roentgen or gamma-rays  $\text{Co}^{60}$  in absolute lethal doses.
- (3) Survival reached 40%; all controls died. (312) See also (669).

## 2,3-DIMETHYL-1,4-NAPHTHO-HYDROQUINONE DIPHOSPHATE TETRASODIUM SALT

Rats with Walker 256 carcinoma, male and female

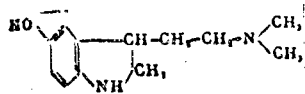
- (2) I.V. 30 min. before irr. of carcinoma 1100 r (158 r/min).
- (3) Intensified radiation effect on carcinoma. (650a)

## 2,4-DIMETHYL-3-OXY-5-MERCAPTOMETHYLPYRIDINE

Mice

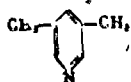
- (2) I.P. 5 mg/20 g 5 min. before irr.
- (3)  $\text{LD}_{50} = 786.2 \pm 19.4$  r; in controls-- $641.8 \pm 5.8$  r. (578)

## N-DIMETHYL-5-OXYTRYPTAMINE

Guinea pigs

- (2) No entry.
- (3) Lessened degree of epilation caused by local irradiation. (623a)

## 3,5-DIMETHYLPYRIDINE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).
- (3) By 30th day after irr., mortality of experimental animals was 95%; in controls--100%. (501a)

## DIMETHYLSULFOXIDE

Bacteria Pseudomonas sp.

- (2) 0.2 - 5 M in 1/15 molar phosphate buffer 6 min. before or 15 min. after irr. with doses up to 30 krad in air and in  $\text{N}_2$ .

- (3) Protected from death with DRF=4 in air and with DRF=1.8 in N<sub>2</sub> with administration before, but not after irr. Protection with 1 M concentration close to maximal. (403) See also (402).

Human kidney cells (tissue culture)

- (2) 0.5-30% 30-45 min. before irr. 1500 rad (344 r/min) at room temperature and at -196°C.
- (3) Protected from death with DRF up to 2.4. Maximum protection at 15%. Temperature had no influence on protective effect. (803)

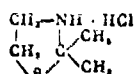
Mice, female

- (2) I.P. 4.5 g/kg before irr. 1000, 1100, 1200, 1300 and 1400 r.
- (3) Survival corresponding to irr. doses, namely: 70, 40, 0, 0, and 0%. (370)

Mice, CBA/HIV line

- (2) I.P. before irr.
- (3) Increased resistance to radiation and decreased spleen O<sub>2</sub> pressure. (642a) See also (725a).

2-DIMETHYLTHIAZOLIDINE HYDROCHLORIDE



Yeasts *Saccharomyces vini*, Megri strain 139 B

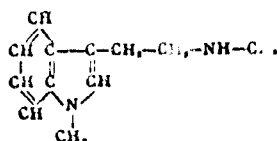
- (2) 10<sup>-1</sup> - 1<sup>-5</sup> M 15-20 min. before irr. 30, 45, and 60 hr (1000 r/min).
- (3) Only 10<sup>-3</sup> M concentration protected from death. DRF of protection =1.3. (185)

4,5-DIMETHYL-2-(p-TOLYL)-1,3-ISOXIMIDAZOLE

Mice, male, CF<sub>1</sub> line

- (2) Internally 250 mg/kg 24 hours before irr. 600 r.
- (3) By 30th day after irr., survival 25% in experimental group and 5-10% in controls. (501)

N,N'-DIMETHYLTRYPTAMINEHYDROCHLORIDE



White mice

- (2) I.P. 54.5 mg/kg before irr. 700 r.



(3) Mortality 93.4%; in controls--95-100%. (111)

4,5-DIMETHYL-2-PHENYL-2-ISOIMIDAZOLE-1,3-DIOXIDE

Mice, male, CF<sub>1</sub> line

(2) Internally 250 mg/kg 24 hours before irr. 600 r.

(3) Survival by 30th day after irr., 35%, in controls--5-10%. (501)

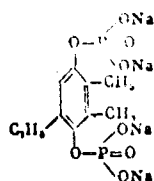
1-DIMETHYLCOYSTEINE

Thymocytes of rats

(2)  $10^{-3}$  20 min. before and after irr. in vitro 500 rad.

(3) Survival increased from 45 to 68%. Protection, when the preparation administered after irr., is considered by the authors as insignificant. (494)

2,3-DIMETHYL-5-ETHYLHYDROPHENYLDIPHOSPHATE TETRASODIUM SALT

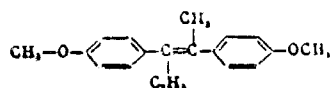


Rats with Walker 255 carcinoma

(2) I.V. 30 min. before irr. of carcinoma 1100 r (158 r/min).

(3) Radiosensitizing effect absent. (650a)

DIMESTROL; dimethylestrogen, estrastilben, dimethyl ether of diethylstilbestrol, para-dimethoxy-3-4-diethylstilben



White mice and rats, male and female

(2) S.C. in butyric solution 0.1-10 mg once or twice 5-10 days before gamma-irr. 650-700 r (mice) and 700-750 r (rats) and one hour after irr.

(3) Protective effect absent. (94)

DISODIUM SALT OF 1,5-DI(p-SULFOPHENYL)-THIOCARBOHYDRAZIDE

Mice, rats, dogs

(2) Administered before irradiation with lethal doses of roentgen rays.

(3) Survival of experimental animals 40-64%, while 100% of controls died. (80)

## DISODIUM SALT 1,3-(m-OXY, p-CARBOXYPHENYL)- THIOUREA

Mice, rats, dogs

- (2) Administered before irradiation with lethal doses of roentgen rays.
- (3) Survival of experimental animals 40-64%, while 100% of controls died. (80)

## DINEZIN

Mice

- (2) Internally, S.C. and I.V. 1,3, and 5 mg/kg twice daily during 20 days after irradiation. 450 r.
- (3) With parenteral administration insignificant increase in survival, (18%) and increase in the average length of life. (95)

Dogs

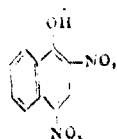
- (2) I.V. 1 mg/kg twice daily for 20 days after irr., 500 r.
- (3) Lessened clinical symptoms of hemorrhagic diathesis; decreased disorders of blood coagulation and of capillary permeability. (98)

## MALONIC DINITRILE

Bacteria Escherichia coli

- (2)  $10^{-2}$  and  $10^{-3}$  M before irr. 15 and 40 kr.
- (3) Survival increased; instead of 50 was 80%, and instead of 0--up to 43%. (519)

## 2,4-DINITRO-1-NAPHTHOL

Mice

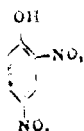
- (2) 30 mg/kg 15 min. before irr. 950 rad.
- (3) Protective effect absent. (788)

## 2,4-DINITROPHENYLDIMETHYLTHIOCARBAMATE

Mice

- (2) I.P. 50 mg/kg before irr. 800 r.
- (3) 8 experimental mice died out of 10; all controls died. (451)

## 2,4-DINITROPHENOL

Spores Streptomyces sp., strain T 12

- (2)  $2 \times 10^{-4}$  and  $1 \times 10^{-5}$  M during 3 hours after irr. (4000 r/min)

- (3) Survival and frequency of mutation unchanged. (804)

Larvae of Drosophyla

- (2) Injection I.P. 0.05% solution 10 min. before irr.; feeding 0.003% solution 4 hours before irr. or during whole span of life.
- (3) Protected from development of recessive sex-linked lethal genes (instead of 4.95--1.13%), protected from translocation (instead of 0.38--0%), from deletions (instead of 1.75--0.47%) and from dominant lethal genes (instead of 60-63%--51-57%). (479)

Mice

- (2) I.P. 2.5 mg/kg before irr. 560-720 r.
- (3) Survival increased, leukopenia expressed to a lesser degree than in controls. (705)

Mice

- (2) 15-18 mg/kg 15 min. before irr. 950 rad.
- (3) Protective effect absent. (788)

Dogs, male and female

- (2) 0.01 g/kg immediately and one day after irr. 250 r.
- (3) Increase in radiation injury and death of individual animals in experimental groups. (56)

Dogs, weight 10-23 kg

- (2) I.V. 1 ml 1% solution per 1 kg of weight before, and at various times after irr. 250 r.
- (3) Five out of 8 experimental animals died. All controls remained alive. (55)

DIOXYACETONE



Rabbits

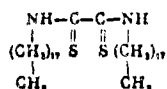
- (2) I.V. 2 g 15 min. before irr. of eye 1500 r.
- (3) Protective effect absent. (799)

1,2-DIOXY-1,1-DIPHENYL-3,3-PIPERIDINPROPANE OXIDE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).
- (3) 17 days after irr. all experimental animals had died. (501a)

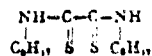
## N,N'-DIOCTADECANDITHIOOXAMIDE

Mice

(2) I.P. 100 mg/kg before irr. 800 r.

(3) 5-7 mice survived out of 10. All controls died. (451)

## N,N'-DIOCTYLDITHIOOXAMIDE

Mice

(2) I.P. 100 mg/kg before irr. 800 r.

(3) One mouse survived out of 10; all controls died. (451)

## DIOSCOREA CAUCASUS

Mice, rats, guinea pigs

(2) Internally or I.P. 20 ml/kg or 5 ml/kg aqueous or alcohol tincture before or after irr. 400, 800, 1100 r.

(3) Survival increased in mice, therapeutic effect in rats absent (700 and 1100 r), length of life of guinea pigs decreased with 5 ml/kg dose. (172a)

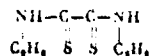
## N,N'-DIPENTHYLDITHIOOXAMIDE

Mice

(2) I.P. 10 mg/kg before irr. 800 r.

(3) Out of 10 experimental animals 2-4 survived. All controls died. (451)

## N,N'-DIPROPYLDITHIOOXAMIDE

Mice

(2) I.P. 10, 20 mg/kg before irr. 800 r.

(3) Antiradiation effect absent. (451)

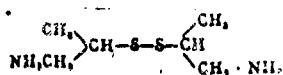
## N-DIPROPYL-beta-MERCAPTOETHYLAMINE

Mice

(2) I.P. in some doses one of which was a maximum dose 5-15 min. before irr. with roentgen or gamma-rays  $\text{Co}^{60}$  in absolute lethal doses.

(3) Protective effect absent. (312)

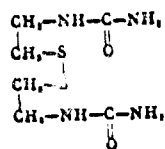
## DISULFIDE-beta-MERCAPTOPROPYLAMINE HCl

Rats

(2) No entry.

(3) (267).

## DISULFIDE-MERCAPTOETHYLTHIOUREA

Rats

(2) Internally 1500 mg/kg 30-120 min. before irr.

(3) Mortality 100% in experimental groups; in controls--96%.  
(267)

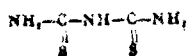
## DITHIOAMMELINE

Mice

(2) I.P. 100-500 mg/kg before irr. 800 r.

(3) Protective effect absent. (451)

## DITHIOBIURET

Mice, male, Swiss line, weight 21 g

(2) I.P. 2 mg/mouse 5-10 min. before irr. 900 r.

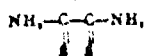
(3) Protective effect absent. (451)

## DITHIODIGLYCOLIC ACID

(2) No entry.

(3) No entry.

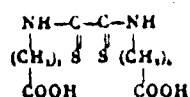
## DITHIOXAMIDE

Mice

(2) 20-150 mg/kg before irr. 800 r.

(3) Protective effect absent. (451)

# DITHIOXYAMIDE-N,N'-DICAPRONIC ACID



## Mice

- (2) I.P. 100 mg/kg before irr. 800 r.
- (3) 5-7 experimental mice survived; all controls died. (451)

# d,1-6,8-DITHIOLACTONIC ACID

## Mice

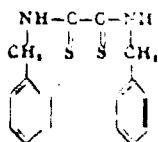
- (2) 50 mg/kg after irr. 550 r.
- (3) Mortality was less in experimental group than in controls. (499)

# DITHIOURACIL

## Mice

- (2) 100 mg/kg before irr. 800 r.
- (3) Antiradiation effect observed. (776)

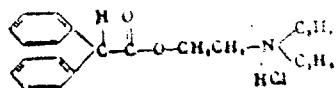
# N,N'-DITOLYLDITHIOXYAMIDE



## Mice

- (2) I.P. 25, 50 mg/kg before irr. 800 r.
- (3) Protective effect absent. (451)

# DIPHACIL



Rabbits, weight 2.2--2.8 kg

- (2) S.C. 10 mg/kg in 1% solution daily during 3 days before irr. 600 r.
- (3) Thrombocyte content in experimental animals on the 3rd, 7th, 15th and 30th day after irr., was either higher, or within the norm; in controls the number of thrombocytes decreased, reaching minimum (42%) on 7-12th day. (321)

# d,1-DIPHENYL-beta-2,6-DINITRO-4-SULFOPHENYLHYDRAZINE POTASSIUM SALT

## Mice

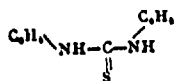
- (2) S.C. 2500 mg/kg 15-20 min. before gamma-irr. Co<sup>60</sup> 1050 r.
- (3) Antiradiation effect absent. Criterion: survival. (309b)

## 2-DIPHENYLMETOXY-N,N'-DIMETHYL ETHYLAMINE -N-OXIDE

Mice, male, CF<sub>1</sub> line

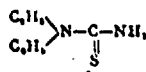
- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).  
 (3) By 30th day the mortality of experimental animals was 90%. (501a)

## N,N -DIPHENYLTHIOUREA

Mice

- (2) I.P. 200, 400, 600 mg/kg before irr. 800 r.  
 (3) With the administration of 400 mg/kg 1 mouse survived out of 10. In other groups all animals died. (451)

## N-DIPHENYLTHIOUREA

Mice

- (2) I.P. 25, 100 mg/kg before irr. 800 r.  
 (3) Protective effect absent. (451)

## 3,4-DIPHENYLFURAZAN-1-OXIDE

Mice, male, CF<sub>1</sub> line

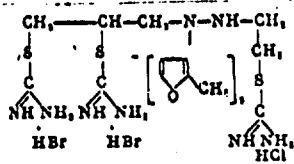
- (2) Internally 250 mg/kg before irr. 600 r.  
 (3) By 30th day survival 40%; in controls--5-10%. (501)

## DIPHOSPHOPYRIDINENUCLEOTIDE; DPN

Mice

- (2) I.P. 1 mg/mouse, 6 injections with 3 days intervals, first injection 15 min., or 15 hours after irr., 800 r.  
 (3) Survival in experimental groups 3 and 21% respectively; in controls--15%. (448)

## beta-DIFURFURYLAMINOETHYLISOTHIOURONIUM HCl

White mice

- (2) I.P. 37.5 and 50 mg/kg 10-15 min. before irr. 700 r.  
 (3) Protective effect absent. (343)

## DIHYDROCHLORIDE OF DIETHYLAMINOETHYL ETHER OF 2-AMINO-4-PYRIMIDINE

White mice

(2) I.P. 50 and 100 mg/kg 10-15 min. before irr. 700 r.

(3) Survival 0 and 10% respectively; all controls died. (154)

DIHYDROCHLORIDE OF DIETHYLAMINOETHYL ETHER -2-AMINOPYRIMIDYL-4-P-AMINO BENZOIC ACID

White mice

(2) I.P. 15, 25, and 50 mg/kg 10-15 min. before irr. 700 r.

(3) Protective effect absent. (154)

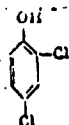
4,6-DICHLOR-7-(DIETHYLAMINOETHYLAMINO)-BENZOTIAZOLE

Mice

(2) I.P. 25, 100 mg/kg before irr. 800 r.

(3) Protective effect absent. (451)

3,4-DICHLORPHENOL

Mice

(2) 30 mg/kg 15 min. before irr. 950 r.

(3) Protective effect absent. (788)

DICETOL; 2,5-dicarbethoxy-3,4-dioxythiophene

Mice with transplanted fibrosarcoma

(2) S.C. 1 mg during 5 days; local irr., 42 r on the 15th day.

(3) On the 25th day after transplantation, the average weight of fibrosarcoma was 6.65 g in controls; 4.83 g, in animals receiving dicetol; 4.06 g in animals receiving only irradiation; and 1.23 g in animals receiving the preparation in conjunction with irradiation. (484)

"MILK-EGG" DIET

Rats

(2) After irr. 450 and 600 r.

(3) Radiation sickness had lighter course in experimental animals. (232)

DIET WITH FOLIC ACID ADDED

Rats

(2) With irr. 600 r.

(3) 2-3 days after irr., the decrease in folic acid content in urine of experimental animals was smaller than in controls. (134)



## DIET, CONTAINING ACIDOPHILUS-YEAST MILK PRODUCTS

Dogs

(2) After irr. 600 r.

(3) Diet showed benevolent effect on the absorption and motor function of small intestine in irradiated animals. (306)

## DIET, CONTAINING DRY BEEF LIVER (up to 18% of protein)

White rats, male

(2) After irr. 500 and 600 r.

(3) The disturbances in protein relationships in blood serum were expressed in lesser degree than in controls. (224)

## DIET, CONTAINING DRY BEEF LIVER (corresponding to 10% casein substitution in synthetic diet)

White rats

(2) After irr. 25-600 r.

(3) Leukopenia and weight loss less marked in experimental animals. (149)

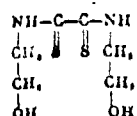
## DIET, CONTAINING DRY SPLEEN (corresponds to substitution of 10% casein in synthetic diet)

White rats

(2) After irr. 25-600 r.

(3) Functional shifts in the central nervous system expressed less in experimental animals than in controls; weight loss and decrease in leukocytes were also smaller. (149)

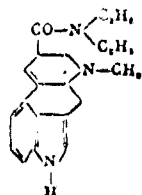
## N,N'-DIETHANOLDITHIOXAMIDE

Mice

(2) I.P. 200 mg/kg before irr. 800 r.

(3) Out of 10 experimental mice, 5-7 survived; all controls died. (451)

## DIETHYLAMIDE, d-LYSERGIC ACID; delezid, lysergid, LSD-25

Rats(2) I.P. ( $0.6 \times 10^{-7}$  m) 5 min. before irr. 1000 r.

- (3) Protective effect absent. (786)

DIETHYLAMINOMERCAPTAN

Rabbits

- (2) I.V. 20 mg/kg 10-15 min. before irr., 10-15 min. after irr., 1000 r (38.6 r/min).

- (3) No effect on the leukocyte content of peripheral blood was not observed. (131)

DIETHYLAMINOCHLORETHANE

Mice, male, weight 18-20 g

- (2) I.P. 20 mg/kg 10-15 min. before irr., 10-15 min. after irr., 700-800 r (38.6 r/min).

- (3) Prophylactic and therapeutic effect absent. (131)

Rabbits

- (2) I.V. 20 mg/kg 10-15 min. before irr., 10-15 min. after irr., 1000 r.

- (3) Prophylactic and therapeutic effect absent. (131)

2-DIETHYLAMINOETHYLBITHIO-CARBAMIC ACID

Mice

- (2) 25 mg/kg 15 min. before irr. 575 r.

- (3) Survival of experimental animals 75%; in controls--50%. (474a)

N,N - DIETHYLAMINOETHYLMERCAPTAN HYDROCHLORIDE

Rats, male, weight 200-250 g

- (2) I.P. 100 mg/kg 10 min. before gamma-irr., Co<sup>60</sup> 750 r (7.5 r/sec).

- (3) Had no effect on urinary excretion of dyshepolozhitel"nych (I.N. not known) substances. (268)

White rats

- (2) I.P. 75 mg/kg 8-10 min. before irr - gamma-irr. Co<sup>60</sup> 750 r.

- (3) Survival 37-45%; in controls--3%. (256)

S-DIETHYLAMINOETHYL-beta-MERCAPTOETHYLAMINE

White rats

- (2) I.P. in 2-3 doses, one of which was a maximum dose, 5-15 min. before irr., in absolute lethal dose. (700 r)

- (3) Protective effect absent. (311)

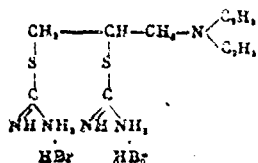
DIETHYLAMINOETHYLPARACHLORANILINE

Black mice

- (2) 72.5 mg/kg 20 min. before irr. 590 r.

(3) Survival 33%, in controls--0-14%. (383)

N,N'-DIETHYL-2,3-DI-(ISOTHIOURONIUMBROMIDE)-PROPYLAMINE HBr



White mice

(2) I.P. 15 and 25 mg/kg 10-15 min. before irr. 700 r.

(3) Survival 0 and 5% respectively; in controls--0%. (343)

DIETHYLDISULFIDE-bis-GUANIDINE

White mice, weight 16-22 g

(2) In dose 100 gamma/g before irr. 700 r.

(3) Survival 16%; all controls died. (125)

SODIUM DIETHYLDITHIOCARBAMATE

Thymocytes of rats

(2)  $10^{-5}$  M 20 min. before and after irr. in vitro 500 rad.

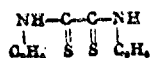
(3) Survival rose from 48 to 68%. Protection with administration after irr., authors consider as insignificant. (494)  
See also (725a).

Chick Emoryos

(2) 0.2 mg in emoryonic sac 1-240 min. before irr. 850-1000 r (100 r/min).

(3) Did not protect from death. (680)

N,N'- DIETHYLDITHIOXYAMIDE



Mice

(2) I.P. 5 mg/kg before irr. 800 r.

(3) 2-4 mice survived out of 10 experimental animals; all controls died. (451)

DIETHYLDITHIOCARBAMATEDIETHYLAMMONIUM

Mice

(2) I.P. before irr. 750-800 r.

(3) Mortality in experimental group half that in controls. (451)

N-DIETHYL-beta-MERCAPTOETHYLAMINE

Mice

(2) I.P. in some doses, one of which was a maximum dose, 5-15 min. before irr. with roentgen or gamma-rays  $\text{Co}^{60}$  in absolute lethal doses.

- (3) Survival 20% in experimental animals; all controls died. (312)

DIETHYLMYRTENYLAMINE HYDROCHLORIDE

White mice, male, weight 18-20 g

- (2) S.C. 15-20 min. before irr. or 20-30 min. after irr. 500 r.  
 (3) Survival 47% with administration before irr., and 35% after irradiation; in controls--35%. (272)

Rabbits

- (2) I.V. 5 mg/kg at various times after irr. 1200 r.  
 (3) Lightened the course of radiation illness and increased life span. (272)

DIETHYLSTILBESTROL; aknestrol, diestryl, diethylstilbestrol, distil'ben, domestrol, implantin, komestrol, laboestrin, metrokin, normevagin, palestrol, proestrin, seksogen, stil'betin, stil'bofollin, stilostrat, sintokrin, sintofollin, estrogenin

Mice, male, C<sub>3</sub>H line

- (2) S.C. 0.2 mg in 0.2 mg butter 10 days before irr. 600 r.  
 (3) Mortality 25%; in controls--50%. (222)

Mice, male, BAL b/c line

- (2) S.C. 0.2 mg in 0.2 mg butter 10 days before irr. 600 r.  
 (3) Mortality 33.3%; all controls died. (222)

Brown mice, male, C<sub>57</sub> line

- (2) S.C. 0.2 mg in 0.2 mg butter 10 days before irr. 600 r.  
 (3) Mortality 21.4%; in controls--41.4%. (222)

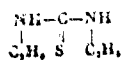
White rats, male and female

- (2) S.C. in butyric solution 1 mg 5 days before gamma-irr., 600 750 r.  
 (3) Survival of male rats increased 35%, in females protective effect absent. (94)

Golden Hamsters

- (2) S.C. 1.2 mg/ 9-10 days before irr. 400 and 600 r.  
 (3) By 30th day after irr., mortality 5 and 65% respectively. In controls--40 and 80%. (215) See also (319).

N,N'-DIETHYLTHIOUREA



Mice

- (2) I.P. 200, 500 mg/kg before irr. 600 r.  
 (3) With the administration of 500 mg/kg one mouse survived out of 10. In the remaining groups, all animals died. (451)

## DIETHYLCYSTEAMINE

Fungi Candida tropicalis

- (2) 0.005 - 4 M during irr., 12.5 krad beta-rays  $\text{Sr}^{90}$ .
- (3) Survival increased 10.5% only with 0.005 M concentration. (800)

## DODECYLDIMETHYLAMINOXIDE

Mice, CF<sub>1</sub> line, weight 20-25 g

- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).
- (3) By 30th day after irr., the mortality of experimental animals was 95%. (501a)

## YEAST AUTOLYSATE

Mice, female, CF<sub>1</sub> line, 10 weeks old

- (2) I.P. 0.1g 30 min., 24 hours before irr., or on the 4th day after irr. 475 r. On the 5th day after irr., mice were infected (intraperitoneal injection) with streptomycin resistant strain of *Pseudomonas aeruginosa*.
- (3) Mortality decreased in experimental animals. (504)

## YEAST EXTRACT

Bacteria Escherichia coli

- (2) Before, at the moment of, or after irr., 60 kr. in culture medium containing 20% of the extract.
- (3) Survival increased with the incubation of bacteria in the extract after irradiation, and with the irradiation. (687)

Barley seeds

- (2) 4-hour wetting of germinating seeds in the extract; irradiation after drying 1 and 6 kr.
- (3) Protected against growth inhibition. (687)

Germinating seeds of peas

- (2) 1 : 10 - 1 : 100,000 after gamma-irr.,  $\text{Co}^{60}$  500 r (10 r/min).
- (3) Decreased growth inhibition and the number of abnormal anaphases. Better indices of protection obtained with concentration 1 : 1000. (181)

Mice

- (2) I.P. 15-20 min. before irr. 700 r.
- (3) Survival 27% in experimental group; all controls died. (443)

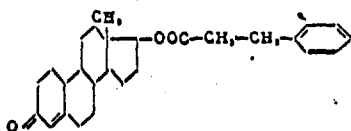
DUMESNYL;  $\sqrt{1}$ -benzimidazol-2-(beta-pyridylcarbonamide)-propionic acid - 50 mg cobalt-thiopropionate Na - 4.5 mg, thiopropionate Na - 0.1  $\sqrt{1}$

Rats

- (2) I.P. 1 mg/kg during 10 days after irr. 400 r.

## (3) Benevolent effect on hematological picture. (598)

DURABOLIN; antikatabolin, durabol, nandrolonphenylpropionate, norstenol, nortestosteronphenylpropionate, superanabolon, phenylpropionate 19-norandrosthenol, 19-nor-17-beta-hydroxy-3-keto-4-androsten-17-beta-phenylpropionate

Rats, male

- (2) I.M. 1 mg before irr. and 0.5 mg every other day for total dose of 5-6 mg after irr., 1000 r.
- (3) Testicular injuries absent in experimental animals. (489)

## GELATINE

Sperm Arbacia punctulata

- (2) No entry.
- (3) Protective effect detected. (464a)

## GINSENG

No entry

- (2) No entry.
- (3) (150a).

## NITROUS OXIDE

Germinating seeds of beans Vicia faba

- (2) In calorimetric bomb 6-10 atm. N<sub>2</sub>O added to 1 atm. of air and held 10 min. before, during, and 5 min. after irr., 200 r (50 r/min).
- (3) Markedly decreased growth inhibition corresponding to pressures. With 10 additional atmospheres, the increase was approximately twice that with irradiation in the air. (225)

Erlsch ascites carcinoma

- (2) 0.8 atm. N<sub>2</sub>O added to 0.2 atm. O<sub>2</sub> before irr. in vitro 740-1600 r at room temperature and at 2°C.
- (3) Did not protect. Criterion: tumor transplantability. (457)

Mice, male and female, CBA line, 8 weeks old

- (2) At the moment of irr., the animals were in a medium containing 83% of N<sub>2</sub>O and 17% O<sub>2</sub> with 1 and 2 atm. pressure;

control irr., in the air under 1 and 2 atm. pressure; I.P. administration of 1.2 mg/mouse of pentobarbital 15 minutes before irr., to all animals receiving irr. under pressure of 2 atm., irr. dose 825 and 700 r.

- (3) Survival 5% in experimental groups under 1 atm. pressure; with 2 atm. pressure, survival 63%; in controls: 10 and 10% respectively. (464)

Mice, male, C<sub>57</sub> line, 8-10 weeks old

- (2) At the moment of irr., the animals were in the medium containing 80 and 20% O<sub>2</sub> under 2 atm. pressure. I.P. administration of 1.2 mg/mouse of pentobarbital 15 minutes before irr. Dose of irr., 750-775 r.
- (3) Survival 36% in experimental groups of 8-week old mice; 57% in 10-week old mice; in controls--2 and 23% respectively. (464)

#### ZYMOSAN

Mice

- (2) I.V. 2 weeks before irr. 675 r.
- (3) Survival considerably greater than in controls. (376)

White rats, weight 190-220 g

- (2) I.P. 100 mg/kg 24 hours before irr., 720 r.
- (3) Protective effect absent. (218)

Rats

- (2) S.C. at 0.025 mg 4 times a day during 3 days after irr. 800 r.
- (3) Survival of experimental animals higher than of controls. (667)

#### ZYMOSAN TRYPSINISED

Mice

- (2) I.V. 4 mg/100 g as suspension immediately after irr., 24 or 48 hours after irr. 600, 800, and 1000 r.
- (3) Phagocytic activity of leukocytes remained on normal level; this, however, had no marked effect on the survival of animals. (824)

IGROTSYN (mixture of 10% solution of mercurisodium salt of salicyl-amide and 30% xanthine solution)

Rats with MTK-III sarcoma

- (2) 0.5 - 4.0/100 g before and after irr.
- (3) Administration before irr. inhibited the restoration of mitotic activity in sarcomatous cells. Administration after irr. showed no effect. (164)

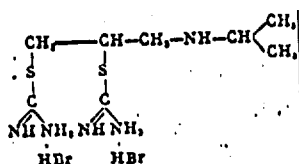
## S-ISOBUTYL-beta-MERCAPTOETHYLAMINE

White mice

(2) I.P. in 2-3 doses one of which was maximum dose, 5-15 min. before irr. with absolute lethal doses. (700 r).

(3) Protective effect absent. (311)

## N-ISOPROPYL-2,3-(ISOTHIURONIUMBROMIDE)-PROPYLAMINE HBr

White mice

(2) I.P. 25 and 50 mg/kg 10-15 min. before irr. 700 r.

(3) Protective effect absent. (311)

## S-ISOPROPYL-beta-MERCAPTOETHYLAMINE

White mice

(2) I.P. in 2-3 doses one of which was maximally tolerated, 5-15 min. before irr., in absolute lethal doses (700 r).

(3) Protective effect absent. (311)

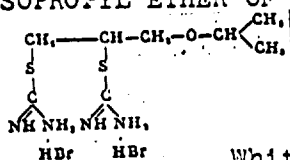
## ISOPROPYLMETHYLFLUOROPHOSPHATE

Mice

(2) 100 gamma/kg before irr. 500-900 r.

(3) Mortality 50% less than in controls. (482)

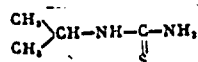
## ISOPROPYL ETHER OF 2,3-DI-(ISOTHIURONIUMBROMIDE)-PROPANOL

White mice

(2) I.P. 25 and 37.5 mg/kg 10-15 min. before irr. 700 r.

(3) Protective effect absent. (343)

## ISOPROPYLTHIOUREA

Mice

(2) I.P. 50, 100 mg/kg before irr. 800 r.

(3) With dose 100 mg/kg one mouse survived out of 10; in other groups all animals died. (451)



## S-ISOTHIURONIUM BROMIDE

Mice

- (2) I.P. 30-45 min. before irr. 1007 rad.  
 (3) Survival 60%; all controls died. (368)

## 5-ISOTHIUROMNIUMPYRIDOXINE

No entry

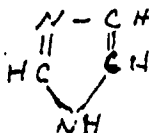
- (2) No entry.  
 (3) (209).

## ISOCYSTEINE

Thymocytes of rats

- (2)  $10^{-3}$  M 20 min. before and after irr. m in vitro 500 rad.  
 (3) Survival rose from 60 to 76% with administration before, not after irr. (494)

## IMIDAZOLE; gluksalin

Mice, C<sub>3</sub>H line, 12-18 weeks old

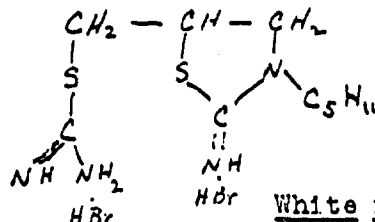
- (2) I.P. 0.35 mg/g 5 min. before irr. 775 r (80 r/min).  
 (3) Survival 50%; all controls died. (720)

## 2-IMIDAZOLINONE

Mice, C<sub>3</sub>H line, 12-18 weeks old

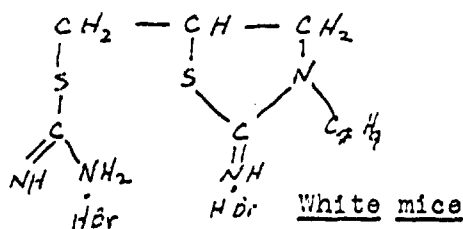
- (2) I.P. in dose constituting 0.5 LD<sub>50</sub> 5 min. before irr. 750 r (80 r/min).  
 (3) Protective effect absent. (720)

## 2-IMINO-3-AMYL-5-(ISOTHIURONIUMBROMIDE)-METHYLTHIAZOLIDINE HBr

White mice

- (2) I.P. 50 and 75 mg/kg 10-15 min. before irr. 700 r.  
 (3) Protective effect absent. (343)

## 2-IMINO-3-BUTYL-5-(ISOTHIURONIUMBROMIDE)-METHYLTHIAZOLIDINE HBr



(2) I.P. 15 and 25 mg/kg 10-15 min. before irr. 700 r.

(3) Protective effect absent. (343)

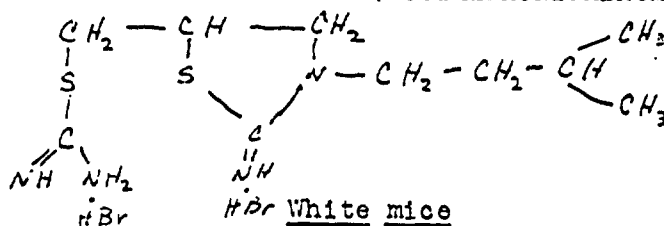
## beta,beta-IMINODIPROPIONONITRILE.

Mice

(2) 30 mg each dose 3 times during 48 hours before irr.

(3) LD<sub>50</sub> + 752.7 ± 40.4 r; in controls 633.9 ± 32 r. (576)

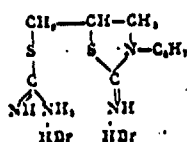
## 2-IMINO-3-ISOAMYL-5-(ISOTHIURONIUMBROMIDE)-METHYLTHIAZOLIDINE HBr



(2) I.P. 25 and 50 mg/kg 10-15 min. before irr. 700 r.

(3) Survival in experimental groups 0 and 25% respectively; in controls--0%. (343)

## 2-IMINO-3-PROPYL-5-(ISOTHIURONIUMBROMIDE)-METHYLTHIAZOLIDINE HBr



(2) I.P. 10 and 25 mg/kg 10-15 min. before irr. 700 r.

(3) Protective effect absent. (343)

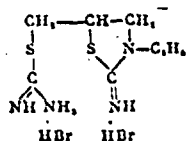
## 2-IMINOTHIAZOLIDINE HBr

Rats, male, weight 200-250 g

(2) I.P. 175 mg/kg 10 min. before gamma-irr. Co<sup>60</sup> 750 r (7.5 r/sec).

(3) Decrease in urinary secretion of dishepolozhitelnykh compounds. (268)

## 2-IMINO-3-ETHYL-5-(ISOTHIURONIUMBROMIDE)-METHYLTHIAZOLIDINE HBr



White mice

- (2) I.P. 15 and 25 mg/kg 10-15 min. before irr. 700 r.  
 (3) Survival 0 and 20% corresponding to doses; in controls--0%. (343)

## INDOLE

White mice, weight 18-20 g

- (2) S.C. 2 mg/mouse 5-10 min. before gamma-irr. 1050 r.  
 (3) Protective effect absent. (289)

Guinea pigs

- (2) No entry.  
 (3) Did not prevent epilation caused by roentgen irr. (623a)

## delta-3-INDOLYL BUTYLAMINE

Thymocytes of rats

- (2) 1:40,000 and 1:4000 in cell suspension in Ringer's solution before irr. 1300 r (80 r/min).  
 (3) Survival rose from 66.7 to 80.3% with smaller concentration; higher concentration was toxic. (17)

## delta-3-INDOLYL BUTYLAMINE HYDROCHLORIDE

White mice

- (2) I.P. 87 mg/kg before irr. 700 r.  
 (3) Mortality 95.7%; in controls--95-100%. (111)

## gamma-3-INDOLYL PROPYLAMINE HYDROCHLORIDE

White mice

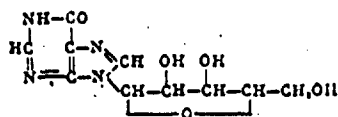
- (2) I.P. 81.7 mg/kg before irr. 700 r.  
 (3) Mortality 93%; in controls 95-100%. (111)

## INDOLEACETIC ACID

Guinea pigs

- (2) No entry.  
 (3) Did not protect from epilation caused by roentgen irr. (623a)

## INOSINE; hypoxanthosine, hypoxanthine riboside



White mice

- (2) I.P. 0.5 mg one hour or every second day during 16 days after irr. 800 r.
- (3) Protective effect absent. (366)

## INSULIN

Mice

- (2) S.C. 0.2 units/kg 1-2 hours before irr., or 1 unit/kg immediately and again during 5 days after irr. 600-800 r.
- (3) The life span increased considerably in the group of animals receiving 0.2 unit/kg; with the dose of 1 unit/kg survival rose to 50% in comparison with 30% in controls. (227)

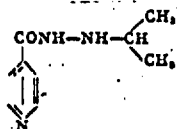
Mico, male, Strain H

- (2) S.C. 0.01- 0.2 units before gamma-irr. Co<sup>60</sup> 1000 r (38-46 r/min).
- (3) By the 5.5 day after irr. all experimental and control animals had died. (179)

Rats, male, weight 150-200 g

- (2) S.C. 0.5, 1, 3, and 5 units/kg 30 minutes, 1 and 2 hours before irr. 1000 r. For therapeutic purposes, in same doses immediately after irr. and during 3 following days.
- (3) With administration before irr., 0.5 unit/kg dose showed protective effect, survival 33% as compared to 17% in controls. Dose 1 unit/kg showed therapeutic effect: survival in experimental group 38%, in controls: 24%. (226)

IPRONIAZIDE; ipronid, iprazid, marsalid, marsilid, isopropylhydrazide-isonicotinic acid

White mice, weight 18-20 g

- (2) S.C. 100 mg/kg 12 or 22 hours before irr. 700 r.
- (3) Protective effect absent. (108)

White mice

- (2) I.P. 200 mg/kg 21 hours before irr. 900 r.
- (3) Protective effect absent. (454)

IONOL; 2,6-di-tert-butyl-4-methylphenol

White rats

- (2) Before irr.
- (3) Inhibited formation of tissue hemolysins. (15a)

## SODIUM IODOACETATE

Spores Streptomyces sp., strain T 12

- (2)  $10^{-3}$  M at pH=7.2 at 37°C during 3 hours after irr. with doses up to 100,000 r (4000 r/min).
- (3) In conjunction with small irr. doses (1000-2000 r) did not change either survival or frequency of mutation, and with larger irr. doses increased effect of irr. (804)

## IODOACETIC ACID

Thymocytes of rats

- (2)  $10^{-8}$  M 20 min. before irr. in vitro 500 rad.
- (3) Did not protect from death. (494)

Cells of mouse lymphoma 5178

- (2)  $2 \times 10^{-5}$  M 30 min. before irr. and during irr. with various doses.
- (3) Increased radiosensitivity 30%. (359) See also (393a).

## CADMIUM CHLORIDE

CdCl2Mice, female, Bagg-Swiss line, weight 20-25 g

- (2) I.P. 2.5 mg/kg 24 hours before irr. 800 r.
- (3) By the 30th day survival 10%; all controls died by 21st day. (725)

## CASEOPSIN (polypeptide, obtained from caseine)

Rats

- (2) I.V. before and after irr. 300-600 r.
- (3) Some increase in survival and decrease of histological changes in sex organs. (141)

## POTASSIUM BROMIDE

## KBr

Rootlets of onion "Batun"

- (2) 0.06 M before irr. 75 r.
- (3) Did not protect from appearance of chromosome changes. (295)

## POTASSIUM CHLORIDE

## KCl

No entry

- (2) No entry.
- (3) (505).

## POTASSIUM CYANIDE

KCN

White mice, male and female, weight 18-20 g(2) I.P. 0.15 mg/mouse 10-15 min. before gamma-irr.  $\text{Co}^{60}$  900 r.

(3) Protective effect absent. (84)

KALLICREIN (glucoprotein from pancreas)

Rabbits

(2) No entry.

(3) (728).

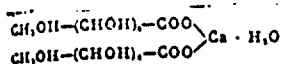
CALCIUM NITRATE

 $\text{Ca}(\text{NO}_3)_2$ Mice L cell culture

(2) 0.01 - 0.06 M 30-60 min. before irr. 1300-1500 r.

(3) Protected against inhibition of mitosis. (813)

CALCIUM GLUCONATE

Mice L cell culture

(2) 0.02 M 30-60 min. before irr. 1300-1500 r.

(3) Protected against inhibition of mitosis. (813)

CALCIUM PANTOTHENATE

Rats

(2) After irr. 450 r and 600 r.

(3) More severe course of radiation sickness. (232)

CALCIUM CHLORIDE

Bacteria Escherichia freundii

(2) 0.03 M immediately after irr. 54,000 r (18,000 r/min), with consecutive 30-120 min. incubation at 37°C.

(3) Decreased DNA destruction from 76.4 to 93.6%. (683)

Mice L cell culture

(2) 0.01 - 0.06 M 30-60 min. before irr. 1300-1500 r.

(3) Protected against inhibition of mitosis. (813)

Rabbits, immunized with Breslau rod bacteria

(2) I.V. 4.7 - 178.5 mg/kg 10% solution 24 hours after irr. of eyes with 400-800 r.

- (3) Permeability of hematoopththalmological barrier increased. In large doses the preparation disturbed permeability without irradiation. (144)

## CAMPOLON

Mice, female, Strain H

- (2) I.P. and S.C. 0.2 ml immediately before gamma-irr.  $\text{Co}^{60}$  1000 r (38-46 r/min).
- (3) By the 5.5th day after irr. all experimental and control animals had died. (179)

## CARBAZOLE



Mice

- (2) I.P. 100 mg/kg before irr. 800 r.
- (3) Three mice survived out of 10; all controls died. (451)

## CARBAMIDE; urea



Paramecium caudatum

- (2) In subtoxic concentrations with irr. 10,000 r (460 r/min).
- (3) Did not protect against inhibition of division tempo. (143)

## 4-CARBOXY-2-HYDRAZINOTHIAZOLE

White mice, weight 17 g

- (2) I.P. 50 mg/kg 5 or 30 min. before irr. 900 r.
- (3) Protective effect absent. (254)

## 2-CARBOXYMETHYLAMINO-5-MERCAPTOTHIODIAZOLE

Rats

- (2) I.P. 300 mg/kg 20-25 min. before gamma-irr. 700 r (572-522 r/min).
- (3) Protective effect absent. (254)

## 1,2-bis-(S-CARBOXYMETHYL-THIOCARBAMIDE)-ETHYL

Mice

- (2) I.P. 200 mg/kg before irr. 800 r.
- (3) Insignificant increase in survival. (451)

## CARBOMETOXYMETHYLBENZYL METHYLDITHIOCARBAMATE

Mice

- (2) I.P. 20 mg/kg before irr. 800 r.

- (3) Insignificant increase in survival. (451)

CARBOXYMETOXYMETHYLTORFOLINYLDITHIOCARBAMATE

Mice

- (2) I.P. 200 mg/kg before irr. 800 r.  
(3) Insignificant protective effect. (451)

alpha-CARBONYLTOLYL -(1-AZO-5')-3,5,3,-TRIIODOTHIURONIUM

Black mice, C<sub>57</sub>, female, weight 20-25 g

- (2) 3 mg/25 g 5 min. before irr. 700 r (85 r/min).  
(3) Survival in control group 13%; all experimental animals died. (382)

CARBOCHOLINE; atonil, carbomed, kacholitin, karkholin, iricholin, lentivazan, moril, tonocholin, enterotonin

Mice

- (2) 5 min. before irr. 675-1200 r.  
(3) Protective effect correlated with the degree of decrease in spleen oxygen consumption. (790)

Mice, female, strain H

- (2) I.P. 0.001, 0.002 mg immediately after gamma-irr. Co<sup>60</sup> 1000 r (38-46 r/min).  
(3) By 7.5 days after irr. all experimental and control animals had died. (179)

2-CARBETOXYMETHYLBENZOTHAZOLE

Mice

- (2) I.P. 100, 200 mg/kg before irr. 800 r.  
(3) Protective effect absent. (451)

CARBETOXYMETHYL-p-CHLORPHENYLDITHIOCARBAMATE

Mice

- (2) I.P. 50, 100 mg/kg before irr. 800 r.  
(3) Protective effect absent. (451)

CARCINOPHYLLINE

Rats with Yoshida sarcoma

- (2) I.P. 0.5 units/100 g before irr.  
(3) Increased effect of radiation. (663)

CATALASE from mold from beef or mouse liver

Mice

- (2) I.V. in doses doubling catalase content with irr. 750-800 r.  
(3) Protective effect absent. (465)



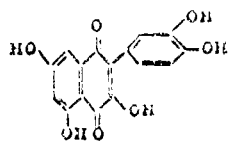
## KAFERID

Rabbits

(2) No entry.

(3) (12).

QUERCETIN; xvertin, meletin, 3,3',4',5,7-pentaoxyflavone

Dogs

(2) Before irr. 350 r.

(3) 3 dogs survived out of 6; in controls 15 dogs out of 37. (465a)

Dogs

(2) Before irr. 350 r.

(3) Out of 9 experimental animals, 5 survived; in controls: 15 out of 37. (465a)

## KOAMID

Rabbits, weight 1.8-2.5 kg, 5-6 months old

(2) I.M. 0.5 ml daily during 25 days after irr. 350 r. On the 5th day after irr. experimental fracture of metatarsals of hind leg.

(3) Accelerated healing of fractures. (287)

White mice, rabbits

(2) No entry.

(3) Increased survival and intensification of regeneration in hemopoietic tissue. (5)

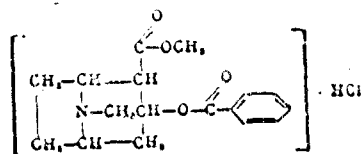
## COBALTGRINPOL

Mice

(2) No entry.

(3) Insignificant protective effect. (515)

## COCAINE CHLORIDE



Mice

- (2) Before irr. 700 r.
- (3) Moderate protective effect. (358)

## COLIMYCIN

Guinea pigs

- (2) 12 mg/kg with irr. 1000 r.
- (3) Did not affect the course of shock caused by irr. (442a)

## COLLOID INFUSION

Dogs, male and female, weight 10-20 kg

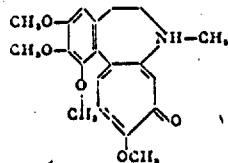
- (2) 15-20 kg/kg with drip method after blood letting 10 ml/kg 600 r (13-14 r/min).
- (3) Out of 13 experimental dogs 5 survived; out of 23 controls--1. (260)

## COLCHICINE; KOLCHINEOZ

White mice

- (2) I.P. 1 mg/kg with local irr. 400 r.
- (3) Intensification of hair bulbs dysplasia. (647)

KOL'CEMID; alkaloid F, kolchamine, omaïn, demekol'cine, dezacetyl-N-methyl-cochicine



Mice, female, Bagg-Swiss line, weight 20-25 g

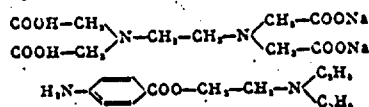
- (2) I.P. 50 mg/kg 1, 12, and 48 hours before irr. 800 r.
- (3) By 30th day after irr. survival 50, 0, and 20% corresponding to times of administration; all controls died by 21st day. (725)

KOMBIOTIC (combination of streptomycin with penicillin in 1:1 ratio

White mice, male and female, weight 18-22 g

- (2) S.C. 2-10 mg/mouse 5 min. before gamma-irr. Co<sup>60</sup>  
1050-1100 r.
- (3) Protective effect absent. (291)

### COMPLEX OF PROCAINE-III



White mice RAP

- (2) I.P. 1 mg/20 g before gamma-irr. Co<sup>90</sup> 900 r.
- (3) By 30th day survival 10% in experimental animals; all controls died. (416)

CORTISONE; adrenalex, cortadren, cortelin, cortifor, cortizat, cortivit, cortodrin, rincorten

Mice, female, Baggs-Swiss line, weight 20-25 g

- (2) I.P. 200 mg/kg 48 hours before irr. 800 r.
- (3) By 30th day survival 10%; all controls died by 21st day. (725)

White rats, male, weight 150-200 g

- (2) I.M. 1.25 - 3.75 mg/rat daily during 10-15 days after irr. beta-source 150,000 erg/cm<sup>2</sup> (average energy of beta particles, 0.658 Mev).
- (3) Decreased skin injury; accelerated healing of ulcers. (286) See also (410).

Guinea pigs

- (2) 10 mg daily during 42 days after local skin irr. 5000 r.
- (3) Inhibited development of deep ulcers and epilation. Superficial ulcers developed with consecutive hyperplasia of the epithelium. (644)

Dogs, weight 10 kg

- (2) Before gamma-irr. Co<sup>60</sup> 1500-200 rad.
- (3) Protective effect absent. The investigation of fibrinolytic systems and histological changes in pulmonary tissue showed absence of protective effect. (466) See also (124, 212a, 661).

## CORTISONEACETATE

White rats, male, weight 150-200 g

- (2) I.M. 0.6 mg per dose 10 days before, immediately and on the second day after irr. 700 r.
- (3) Leukopenia less expressed in experimental animals. (332)

Guinea pigs, weight 504 g

- (2) S.C. daily during 42 days after local irr. 5000 r of body surfaces on the sides (field 2 x 6 cm in diameter).
- (3) Epilation was lesser in experimental animals; and deep ulcers developed only in 4 animals out of 16; in controls they developed in 10 out of 11. (644)

Dogs, weight 12-14 kg

- (2) 15 mg on second day and 3 days after irr., 500 r.
- (3) 4 out of 8 controls died, 3 out of 10 experimental. (332)

## BONE MARROW

Mice

- (2) Once after irr. with neutrons 350-360 rad.
- (3) Survival 52%, by 10th day all controls had died. (796)

Mice

- (2) Isologous homologous bone marrow after irr. 950 r.
- (3) Protective effect, expressed more with administration of isologous bone marrow. (588) See also (492a, 636a).

Rats

- (2) I.V. bone marrow cell suspension after general irr. 400 r.
- (3) By the 7th day after irr. the DNA and RNA content of spleen considerably higher in experimental animals than in controls. (545)

Dogs

- (2) I.V. bone marrow suspension from adult dogs or puppies; volume of suspension 80 to 150 ml containing from 21 mln to 6 mlrd of nucleated elements administered at various times after irr. 600 r. S.C. from 50 to 120 ml (from 94 mln to 14 mlrd of nucleated elements) from adult dogs or puppies on 3-4th day after irr.
- (3) The 5 dogs receiving bone marrow from adult dogs died; out of 6 dogs receiving bone marrow from puppies, 2 dogs survived; 6 controls died. All 6 dogs receiving bone marrow subcutaneously from adult dogs died. Out of 5 dogs receiving bone marrow from puppies 2 dogs survived. All controls died. (142)

Dogs

- (2) Transplantation after irr. 600 r and 800-1000 r
- (3) With irr. 600 r survival in experimental animals 70%. With irradiation of 800-1000 r therapeutic effect absent. (336)

Dogs

- (2) 4-11 mln. cells in single dose, or fractionally, after irr. 600 r.
- (3) 21 dogs survived out of 24. All controls died. (16)

Dogs

- (2) I.V. autologous or homologous bone marrow after irr. 600-1500 r.
- (3) All animals developed acute radiation sickness; however, the life span of animals receiving autologous bone marrow was longer than that of animals receiving the homologous bone marrow. (633)

Dogs

- (2) I.V. on 9-10th day after irr. 700-1200 r.

- (3) Some antiradiation effect observed only with 700 r irr. (302) See also (33a, 548).

#### Chimpanzees

- (2) I.V.  $1.6-2.2 \times 10^{10}$  chimpanzee bone marrow cells 28-33 hours after gamma-irr. 900 or 1200 r.
- (3) With 900 r dose, 2 monkeys out of 3 died by the 16th-19th day, the third dying on 17th day after irr. With dose 1200 r, two experimental monkeys died on 11th day and 18th day, two controls on 17-19th day. (724) See also (307).

#### BONE MARROW ALLOGENIC

##### Rabbits, male, Chinchilla

- (2) Thrice irradiated with total dose 1600 r with daily intervals. Bone marrow administered I.V.  $1 \times 10^9$  cells 1-3 hours after third irr.
- (3) After 17 weeks, 30 rabbits survived out of 130. 20 controls died 2 weeks after irr. (700)

#### AUTOLOGOUS BONE MARROW

##### Rats, male, Wistar type, weight 180-200 g

- (2) Thrice irr. (interval 7 days) with total dose 1050 r. I.V. administration 17-20 mln bone marrow cells extracted from screened femoral bone.
- (3) Survival 65%; in the group with screened femur without transplantation--20%; all controls died. (308)

##### Rats

- (2) After single or fractional irr. I.V., injection of bone marrow extracted from screened femoral bone.
- (3) Survival of controls--15%; in experimental group: 45-50%. (309)

##### Monkeys *Macaca mulatta*

- (2)  $2.2 - 12.9 \times 10^8$  of cells after irr. 925 r (18 r/min).
- (3) All of the 6 experimental animals survived longer than 50 days. (784)

##### Monkeys *Macaca mulatta*

- (2) I.V. suspension of bone marrow cells 2 hours after irr. 550-1050 r. Control irr. 650 r.
- (3) Out of 7 treated animals 6 lived longer than 30 days; controls, 12-16 days. (433)

##### Dogs

- (2) No entry.
- (3) (774).

##### Calves

- (2) No entry.
- (3) (654). See also (425, 426, 599a).

## HETEROLOGOUS BONE MARROW

Mice

- (2) Bone marrow of rats after irr. 500, 700, 800, 950, 1100, and 1300 r.
- (3) Increased mortality in the first 30 days with 500-700 r doses. Considerable decrease in mortality with doses 900, 950, 1150, and 1300 r. (486)

Guinea pigs, weight 300 g

- (2) Once, 24 hours after irr. 100-200 r.
- (3) Antiradiation effect absent. Criterion: DNA content of bone marrow. (752)

Mice

- (2) Bone marrow of rats after irr. 675-750 r.
- (3) After temporary improvement, the sickness ran its course--ending in death of experimental animals on 40-60 day after irr. (785)

White mice, weight 20-22 g

- (2) I.V.  $22 \times 10^7$  cells of bone marrow of rats 1 day after gamma-irr. 800 r.  $\text{Co}^{60}$  (350 r/min).
- (3) By 30th day survival 12%; all controls died on 11-12 day after irr. (117)

## HOMOLOGOUS BONE MARROW

Mice

- (2) Cell suspension administered 24 hours after irr. 1000 r.
- (3) In experimental group active proliferation of bone marrow cells but with a considerable amount of chromosome changes. (558)

White rats, male, weight 160-210 g

- (2) I.V.  $2.3-20.6 \times 10^7$  per rat nucleated elements 2.5 hours or 1st, 2nd, or 3rd day after gamma-irr. 750 r.
- (3) Protective effect absent. (279)

White rats, male and female, Wistar line

- (2) I.V. bone marrow from femur and tibia of young rats of the same line 2, 24 hours, 2, 3, 6, and 12th day after gamma irr. 1000 r.
- (3) In the group receiving bone marrow 24 hours after irr., survival by 60th day after irr. 83.6%. In the groups receiving bone marrow after 2, 3, 6, and 12 days after irr., survival 55.1, 46.0, 26.8, 19.3, and 80%, respectively. In controls survival 11.2%. (262)

Guinea pigs, weight 300 g

- (2) Single dose 24 hours after irr. 200 r.
- (3) Antiradiation effect absent. Criterion: DNA content

of bone marrow. (752)

Rabbits

- (2) I.V. or S.C. during 10 days at various times after irr. 1000 and 1200 r.
- (3) Protective effect absent with I.V. administration. Survival more than 50% with S.C. administration; all controls died on 8-9 day after irr. (158)

Rabbits

- (2) 24 hours after irr. a free homoplastic transplantation of bone marrow from a healthy rabbit of an analogous line and age as the recipient, was made into subcutaneous cellular tissue 700, 800 and 1190 r.
- (3) 31 rabbits survived out of 34; 5 survived out of 23 controls. (140) See also (302).

Dogs

- (2) Transplantation  $1-2 \times 10^9$  cells 1-2 days after irr. 600 r.
- (3) Survival 70%. (220) See also (211).

Dogs, weight 11-13 kg

- (2) I.V.  $1-2 \times 10^8$  cells 3-7 times after irr. 400 r.
- (3) 5 dogs survived out of 10; out of 10 controls, 3. Average span of life of treated animals,  $20.2 \pm 2$  days; of controls,  $14 \pm 1.8$  days. (263)

Monkeys Macaca mulatta

- (2)  $2.2 - 12.9 \times 10^8$  cells after irr. 550-935 r (18 r/min).
- (3) Not one experimental monkey lived more than 50 days. (784)

Monkeys, Macaca mulatta, male and female, weight 3-5 kg

- (2) I.V.  $2 \times 10^9$  viable cells of homologous bone marrow in 30 cm<sup>3</sup> of donor blood 3-4 hours after irr. 650, 700, and 800 r.
- (3) Five experimental animals out of 24 lived longer than 30 days; in controls average life span--10 days. In 16 out of 24 experimental animals benevolent effect on the composition of peripheral blood. (432)

Monkeys Macaca mulatta

- (2) I.V. cell suspension of bone marrow (2500-3500 kl) 20 ml 72 hours after irr. 900 r (20 r/min).
- (3) 2 monkeys survived in experimental group; in control--1. (364)

Monkeys Macaca mulatta

- (2) I.V. cell suspension of bone marrow 24 hours after irr. 550-1050 r. Control irr. 650 r.
- (3) Out of 18 treated animals, 3 survived longer than 30 days, controls survived 11-16 days. (433)

Dogs, monkeys

- (2) No entry.
- (3) (33). See also (169a), (544b).

## ISOLOGOUS BONE MARROW

Mice, line CBA

- (2) I.P. around  $2 \times 10^7$  nucleated cells 4 or 24 hours after irr. 1092 r.
- (3) Survival corresponded to times of administration: 91 and 93%; all controls died. (762)

Mice

- (2) I.V.  $0.5 \times 10^6$  --  $10 \times 10^6$  cells after irr. 900 r. Before the administration, bone marrow was cultivated in vitro from 1 to 8 days.
- (3) Survival in experimental groups receiving bone marrow: cultivated one day, 100%; 2 days, 44%; 3 days, 38%; 6-8 days, 0%; in controls, 0%. (391)

Rats, Wistar line, weight 175-195 g

- (2) I.V. cell suspension (1 ml  $5 \times 10^7$  cells) received from femur and tibia of young rats of the same line, 2, 24, or 48 hours and on 3rd, 6th, or 12th day after gamma-irr. 1000 r.
- (3) By 60th day in the group receiving bone marrow 24 hours after irr. the survival 83.6%; in controls--10%. Protective effect absent in other groups. (261)

Guinea pigs

- (2) No entry.
- (3) (767). See also (602a, 699).

## CAFFEINE

Mice, male, line H

- (2) I.V. 2 mg immediately before gamma-irr.  $\text{Co}^{60}$  1000 r (36-46 r/min).
- (3) In 5.5 days after irr. mortality 75%; all controls had died by that time. (179)

Rabbits

- (2) 0.075 g one hour and 1 day after irr. 1000 r.
- (3) Protective effect absent. (246) See also (505).

## beta-(CAFFEINE)-8-ALANINE MONOHYDRATE

White mice

- (2) I.V. 500 and 1000 mg/kg 10 or 15 min. before irr. 700 r.
- (3) Survival 0 and 10% correspondingly; all controls died. (154)



## BLOOD, GLUCOSE-NITRATE

Dogs

- (2) Exchange transfusion 200 ml after irr. 600 r (12.6 r/min).
- (3) Therapeutic effect absent. (189)

## BLOOD, ALCOHOL-GLUCOSE-CITRATE

Dogs

- (2) Exchange transfusion 20-200 ml after irr. 600 r (12.6 r/min).
- (3) Therapeutic effect observed. (189)

Dogs, rats

- (2) No entry.
- (3) (165).

## XENON; Xe

Beans Vicia faba

- (2) Germinating beans irr. with various doses in chamber containing 1 atm. of air plus 0.6 or 1 additional atm. Xe, or a mixture consisting of 0.2 atm. O<sub>2</sub> and 0.8 atm. Xe.
- (3) Decreased oxygen-related radiosensitivity. (457)

## LAGOCHILUS INEBRIANS Bre

Dogs

- (2) Internally during 14 days after polonium administration (Po<sup>210</sup>), calculated 0.06 mcurie/kg.
- (3) Length of life 38-46 days; in controls, 33-34 days. (197)

## LACTAN ACIDS AND NITRATES

Rats

- (2) I.P. 400 mg/kg before gamma-irr. 800 r Co<sup>60</sup>.
- (3) Protective effect absent. (646)

## LACTOSIN (preparation from sour milk)

Rabbits

- (2) During 7 days after irr. 300 r.
- (3) Increased number of leukocytes and raised percentage of granulocytes in peripheral blood. (672)

## LACTOFLAVINE -5-PHOSPHATE

Rats, male, weight 120-140 g

- (2) I.P. 10 mg/rat 15 min. before irr.
- (3) Protective effect absent. (575)

## LEVOMYCETIN

Bacteria Escherichia coli B

- (2) 5 mg/l after irr. in air or nitrogen.
- (3) Survival increased, approaching the survival of radio-resistant strain B/r. (363)

Bacteria Escherichia coli

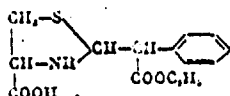
- (2) 10 mg/l in culture medium after irr. 10 kr.
- (3) Decreased number of mutations. (554) See also (518b).

LEUCOANTOTsIPIDINY; preparations from roots of horse sorrel possessing vitamin P action

Rats

- (2) With irr. 900 r.
- (3) Protective effect absent. (350)

LEUCOGEN; 2-(alpha-phenyl-alpha-carbetoxyethyl)-thiazolidin-4-carboxylic acid



Guinea pigs, male, weight 300-400 g

- (2) I.V. and internally 10 mg/kg starting from 1st, 3rd, or 10th day after irr. 30 r.
- (3) Activation of leukopoiesis only with administration beginning on the 10th day after irr., that is during the beginning of recovery. (275)

Dogs, male, weight 10-14 kg

- (2) Internally 1-5 mg/kg during 30 days after irr. 400 r or during the whole period of fractional irr. 10 or 20 per day with total dose 450 r.
- (3) Inhibited development of anemia in acute radiation injury and in fractional irr. at 10 r per day. (38)

Dogs without lineage, male and female, weight 12-16 kg

- (2) Internally 60 mg per day during 20 days after irr. 400 r.
- (3) Out of 8 experimental animals 5 survived; out of 25 controls, 10. (137)

Rats, rabbits, dogs

- (2) Internally 1-5 mg/kg during 30 days after irr.
- (3) Number of erythrocytes decreased less in treated animals. (12, 37) See also (2, 283).

LEUKODEL'FINIDIN; preparation from mountain ephedra possessing vitamin P action

White rats

- (2) No entry.

- (3) Membrane permeability decreased in acute radiation sickness. (30) Tissue sorption properties increased. (31)

### LEUKOCYTIC MASS

#### Dogs

- (2) I.V. every other day during 15 days starting from 3rd day after irr. 600 r.  
(3) One dog survived from experimental animals; all controls died. (292)

#### Dogs

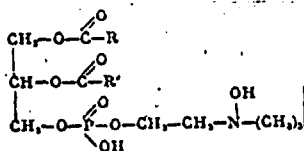
- (2) Administered at various times after gamma-irr. 600 r.  
(3) Some therapeutic effect. (399) See also (312a).

### LEUKOCYTIC LYSATE from leukocyte suspension

#### Dogs

- (2) I.V. on alternate days during 15 days starting from 3rd day after irr. 600 r.  
(3) One dog survived; all controls died. (292)

### LECITHIN

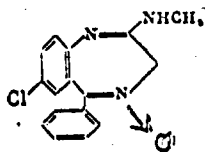


(R, R' --radicals of higher fatty acids)

#### Mice, female, strain H

- (2) I.P. 5 mg immediately after gamma-irr. Co<sup>60</sup> 1000 r (38-46 r/min).  
(3) By 7.5 days, all experimental and control animals had died. (179)

LIBRIUM; chlordiazoepoxide, methamindiazoepoxide, Ro-5-0690, chlorhydrate-7-chlor-2-methylamino-5-phenyl-3-n-1,4-benzodiazepin-4-oxide



#### Mice

- (2) 7.5 or 12.5 mg/kg before irr.  
(3) Protective effect observed. (614)

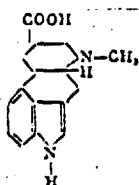
#### Mice, male, CF<sub>1</sub> line, weight 20-25 g

- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).  
(3) By 30th day after irr. 95% of experimental animals died. (501a)

Mice

- (2) 8.75 mg/kg 15 min. before irr. 800 r (40 r/min).
- (3) Protective effect observed. (613a)

## 2-Br-d-LYSERGIC ACID, BOL 148

Rats, male, weight 150-225 g

- (2) I.P. 10 mg/kg before irr. of an area of abdomen 1500 r (size of irr. field 11.3 cm<sup>2</sup>). Irradiated animals were under nembutal narcosis (25 mg/kg I.P.) then trypan blue 1% solution 0.4 ml/100 g was administered I.V.
- (3) Investigation 24 hours after irr. showed that vascular permeability of intestinal tract was less than in controls; and in 48 hours it did not differ from controls. (816)

## LYSINE

Mice, male, line H

- (2) I.P. 5 mg immediately before gamma-irr. Co<sup>60</sup> 1000 r (38-46 r/min).
- (3) 5.5 days after irr. mortality 41.7%; in controls--83.3%. After 10 days all experimental and control animals died. (179)

## LYSOTSIN

Rats, male

- (2) S.C. 10 mg or 20 mg 12 hours before irr. and during 10-6 days after irr. 700 r.
- (3) Out of 10 experimental rats 1 and 2 rats survived respectively; all controls died. (660a)

Rabbits

- (2) I.V. 2 mg/kg during 4 days before irr. 2000 r or at 2 mg/kg before each dose of irr. 100 r with total dose 2000 r. In another experiment--single dose before or after irr.
- (3) In the group of animals receiving preparation during 4 days before irr. average length of life 130-192 hours; in controls--2-3 hours. With fractional irr. average length of life 26-30 days; in controls--15-24 days. Single administration before or after irr. not effective. (447)

## LYCOPENE

Mice, Swiss line, weight 26 ± 4 g

- (2) I.P. 0.3 ml 20 hours before irr. and 0.05 mg during 30

minutes after irr. (80 injections)

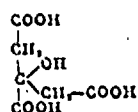
(3) Protective effect absent. (367)

Mice

(2) I.P. 50-100 gamma 30 min. after irr. 700-750 r.

(3) Survival increased insignificantly. (475)

CITRIC ACID



Rats with MTK-III sarcoma

(2) No entry.

(3) (769).

CALF'S LYMPH

Mice

(2) S.C. after irr.

(3) Antiradiation effect absent. (490)

LYMPHOCYTES

Mice, male, Wistar line

(2) No entry.

(3) (682).

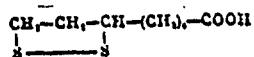
LIPPOXIDASE

Mice, male, weight 16-22 g

(2) I.P. 2.5-250 mg/kg 60 min. after irr. 450-800 r.

(3) Effect insignificant. (415)

alpha-LIPOIC ACID; sodium salt of dl-6,8-dithiooctane acid, protogen A



White mice, weight 20-24 g, 50-60 days old

(2) I.P. 1-2-3 mg before or after irr. 600 r (52 r/min).

(3) With administration before irr. survival was 8.3%, 8.3, 12.5% respectively; with administration after irr. survival was 8.3, 4.1, 8.3%. All controls died. (434)

LINSEED OIL

Mice

(2) I.P. 0.5-1.0 ml 24 hours before, or immediately after irr. 640-690 r.

(3) Survival in experimental animals was higher than in

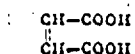
controls. (473)

LEMAN'S SALVE (adrenaline 0.5 g, xylocaine 0.4 g, phenegran in cream)

Piglets

- (2) Put on the skin before irr. 1900-2150 and 2350 r.
- (3) Some protective effect observed. (694)

MALEIC ACID



Yeasts Saccharomyces ellipsoides

- (2)  $10^{-5}$  -  $10^{-3}$  M in culture medium before and during irr. 20,000 r.
- (3) Sensibilization corresponding to concentrations. Survival with  $10^{-3}$  M decreased from 85.3 to 22.6%. (562)

Rats with sarcoma WTK-III

- (2) I.P. 0.04 mg/100 g, 5 mg/100 g 1 hour before irr. or immediately after irr.
- (3) Radiosensitizing effect absent. (653)

MALLOPHENIC ACID

Mice, female

- (2) I.P. 0.75 or 1.0 mg/kg 10 min. before irr. 1025 r.
- (3) Out of 10 experimental animals 4 and 2 survived respectively; all controls died. (377a)

MALONONITRILE

Mice

- (2) 5 mg/kg before irr. 800 r.
- (3) Out of 10 experimental animals, 4 survived; all controls died. (451)

MALONIC ACID



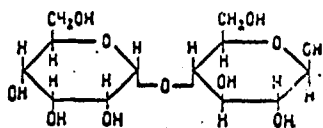
Yeasts Saccharomyces ellipsoides

- (2)  $10^{-3}$  M added to culture medium before and during irr. 10,000-50,000 r.
- (3) Sensitized to irr. Survival with 10,000 r instead of 77.5% decreased to 45.1%. Sensitizing effect removed completely by aspartic acid ( $10^{-3}$  M), fumaric acid ( $2 \times 10^{-3}$  M), and removed partially by cysteine ( $10^{-3}$  M) added to culture medium after irr. (562)

Rats with transplanted MTK-III sarcoma

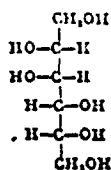
- (2) I.P. before irr.
- (3) Effect of radiation increased. (663)

## MALTOSE

Spores Streptomyces sp., strain T 12

- (2)  $2 \times 10^{-4}$  M during 3 hours after irr. (4000 r/min).
- (3) Survival and frequency of mutation did not change. (80%)

## d-MANNITE

Rat liver mitochondria

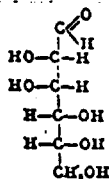
- (2) 2.88% and 5.75% solution before and after irr. in vitro 50 r.
- (3) Protected from inactivation of ferments oxidizing citrates with the administration before but not after irr. In 5.75% solution the oxidation of citrate inactivated 10%, in 2.88%--60%. (478)

## MANNITOL

Bacteria Escherichia coli K 12

- (2) 0.2-1.2 M 15-30 min., before, with irr. 45,000 r (60,000 r/min) (sic).
- (3) Protection against death rose with concentration. (634)

## MANNOSE

Rat liver mitochondria

- (2) Before and after irr. in vitro 50 r.

- (3) With administration before irr. protected from inactivation of citrate oxydizing ferments. (478)

## MANGANESE CHLORIDE

Seeds of beans Vicia faba

- (2) 1% solution 30 min. before and during irr. 600 r with various intensities of irr.
- (3) Promoted reunion of chromosome breakdowns. (820)

## PEANUT OIL

Mice

- (2) I.P. 24 hours before or immediately after irr. 640-690 r.
- (3) Survival was higher in experimental group than in controls. (473a)

## CALOPHYLLUM OIL

Piglets

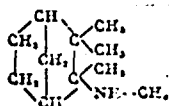
- (2) Put on skin before local irr. 1900-2150 and 2350 r.
- (3) Protective effect absent. (694)

## COPPER

White rats, 3-4 months old

- (2) S.C. or internally during 14 days before or after irr. 400-600 r.
- (3) Weakened the severity of radiation injury. (752a)

MEKAMIN; 3-methyl-amino-isocamphane hydrochloride, verzamin, inversin, kezatin, mekafides, mekamylaminohydrochloride, mevazin, plegangin, revertin

White mice, male, weight 18-20 g

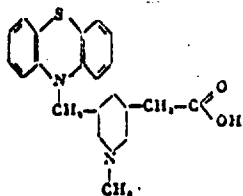
- (2) S.C. 15-20 min. before irr. or 20-30 min. after irr. 500 r.
- (3) With administration before irr., survival 63%; after irr., 53%; in controls--35%. (272)

Rabbits

- (2) I.V. dose 1 mg/kg 30 min., 1.5 hour and then one injection daily during one week after irr. 1200 r.
- (3) Out of 23 experimental animals 4 survived; all controls died. (272) See also (9).



MENAZIN; lakumin, notiazin, pakatal, pekazin, paksital, acetate, 10-(1'-methylpiperidyl-3-methyl)-phenothiazine



#### Rats

- (2) I.M. 10-15 mg/kg or internally 20 mg/kg 30 min. before irr. 800 and 550 r.
- (3) With I.M. administration, survival of experimental animals,  $20 \pm 5.9\%$  higher than in controls. Antiradiation effect observed also with internal administration. (233)

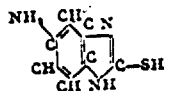
#### Cats

- (2) I.M. 0.025 mg/kg 30 min. before irr.
- (3) Out of 12 experimental animals, 6 survived; in controls--2. (233)

#### Mice

- (2) S.C. 2.5-10 mg/kg before irr. 500 and 700 r.
- (3) Some protective effect with 2.5 mg/kg dose only. (296)

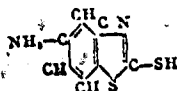
#### 2-MERCAPTO-5-AMINOBENZIMIDAZOLE



#### Mice

- (2) I.P. before irr. 800 r.
- (3) Protective effect absent. (451)

#### 2-MERCAPTO-6-AMINOBENZOTHIAZOLE



#### Mice

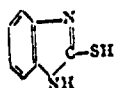
- (2) I.P. 100-200 mg/kg before irr. 800 r.
- (3) Protective effect absent. (451)

#### 10-MERCAPTO-11-AMINO-UNDECANIC ACID

#### No entry

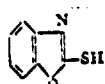
- (2) No entry.
- (3) (353).

## 2-MERCAPTOBENZIMIDAZOLE

Mice

- (2) I.P. before irr. 800 r.
- (3) Protective effect absent. (451)

## 2-MERCAPTOBENZOXAZOLE

Mice

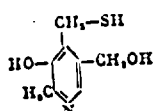
- (2) I.P. 150 mg/kg before irr. 800 r.
- (3) Mortality decreased 50%. (451)

## 2-MERCAPTO-6-NITROBENZOTHAZOLE

Mice

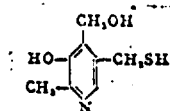
- (2) I.P. 50 mg/kg before irr. 800 r.
- (3) Protective effect absent. (451)

## 4-MERCAPTO-PYRIDOXINE; 2-Methyl-3-oxy-4-mercaptomethyl-5-oxymethyl - pyridin

Mice, female

- (2) I.P. 7 mg/kg 5 min. before irr. 700 r.
- (3) Mortality 67.4%; in controls--74.5%. (578)

## 5-MERCAPTO-PYRIDOXIN; 2-methyl-3-oxy-4-oxymethyl-5-mercaptomethyl-pyridin

Bacteria Escherichia coli B/r

- (2)  $10^{-3}$ , before irr. 0-10 krad ( $3 \times 10^5$  rad/hour) in air and in  $N_2$ .
- (3) Protected from death with non-aerobic suspension, but not aerobic or anoxic. (405)

Ascites Erlich carcinoma

- (2) With irr. in vitro 20 kr or I.P. with local irr. in vivo 5000r.

- (3) Did not protect with irr. in vitro; protected in vivo.  
Criterion: tumor weight. (574)

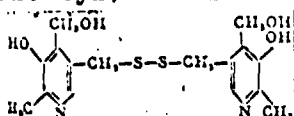
White mice, inbred male

- (2) I.P. 5 mg/20 g 5-10 min. before irr. 690-1110 r (148 r/min).  
(3) LD<sub>50</sub> with 597.0 r rose to 821.3 r. (405)

Rats, weight 110-140 g

- (2) Internally 100 mg/120 g 1 or 2 hours before irr. 600 r.  
(3) Mortality in experimental groups was 32 and 48% respectively; in controls--80%. (578)

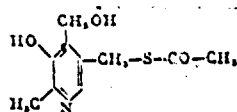
5-MERCAPTO-PYRIDOXIN-DISULFIDE; bis-(2-methyl-3-oxy-4-oxymethyl-beta-picoly)-disulfide



Mice, female

- (2) I.P. 5 mg/20 g 5 min. before irr. 600 and 700 r.  
(3) Mortality in experimental groups corresponding to doses, 84 and 92%; in controls, 58 and 70%. (578)

5-MERCAPTOPYRIDOXIN-THIOACETATE; 2-methyl-3-oxy-4-oxymethyl-5-acetyl-mercaptopmethylpyridin



Mice, female

- (2) I.P. 5 mg/20 g 5 min. before irr. 700 r.  
(3) Mortality 26%; in controls, 74.5%. (578)

beta-MERCAPTOPROPYLAMINE; propamin



White mice, weight 18-22 g

- (2) I.P. 150 mg/kg before irr. 1000 r.  
(3) Protective effect absent. (155)

Mice

- (2) I.P. 500 mg/kg 15 min. before irr. 700 r.  
(3) Survival 46.6%; all controls died. (270)

Black mice, C<sub>57</sub> line

- (2) I.P. before irr. 500-550 r.

- (3) The incidence of lymphatic leucosis in remote periods after irr. was 2-3 times less in experimental animals than in controls. (285)

White mice, without lineage

- (2) I.P. before irr. 500-550 r.  
 (3) Myeloid leucosis in remote periods after irr. observed in experimental and control animals. (285)

Rats, female, weight 200-250 g

- (2) I.P. 300 mg/kg 25 min. before irr. 650, 800, 950 r.  
 (3) By the 30th day after irr. out of the 20 rats in each group, 16, 9 and 4, respectively, had survived. (267)

White rats, pregnant (15th day of pregnancy)

- (2) I.P. 75 mg/kg 15 min. before irr. 300 r.  
 (3) Number of intrauterine deaths 30.5% less in experimental animals than in controls. (54) See also (273).

MERCAPTOPROPYLAMINE ASCORBATE

Rats

- (2) I.P. before gamma-irr. Co<sup>60</sup> dose LD<sub>100/30</sub>.  
 (3) Survival 80%. (267)

MERCAPTOPROPYLAMINE ACETATE

Rats

- (2) I.P. 83 mg/kg before gamma-irr. Co<sup>60</sup>, dose LD<sub>100/30</sub>.  
 (3) Survival 20%. (267)

MERCAPTOPROPYLAMINE LACTATE

Rats

- (2) I.P. 228 mg/kg before gamma-irr. Co<sup>60</sup>, dose LD<sub>100/30</sub>.  
 (3) Survival 60%. (267)

MERCAPTOPROPYLAMINE CHLORIDE

White mice, weight 16-22 g

- (2) I.P. 500 gamma/g immediately before irr. 700 r.  
 (3) Survival 46.6%; all controls died. (125)

White rats, weight 160-200 g

- (2) I.P. 400 gamma/g immediately before irr.  
 (3) Survival 30%; all controls died. (125)

## MERCAPTOPROPYLAMINE CHOLEATE

Rats

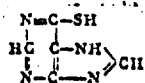
- (2) I.P. 158 mg/kg before gamma-irr. Co<sup>60</sup> dose LD<sub>100/30</sub>.  
 (3) Survival in experimental group 10%. (267)

## MERCAPTOPROPYLAMINE CITRATE

Rats

- (2) I.P. 220 mg/kg before gamma-irr. Co<sup>60</sup> dose LD<sub>100/30</sub>.  
 (3) Survival in experimental group 55%. (267)

6-MERCAPTOPURINE; izminur, merkaleikin, mercapuren, percapurin, mern, purinetol

HeLa cells S-3 culture

- (2)  $2 \times 10^{-4}$  -  $2 \times 10^{-5}$  M 90 min. before or after irr. 750 r (432 r/min).  
 (3) The effect of preparation and of irradiation was additive and clearly manifested on the 5th day after irr. (378)

Rats with transplanted tumor

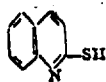
- (2) I.P. 2 mg/100 g before irr.  
 (3) Increased effect of radiation not observed. (663)

## MERCAPTOTHIAZOLINE

Paramecium caudatum

- (2) In subtoxic concentration with irr. 10,000 r (460 r/min).  
 (3) Did not protect against the inhibition of division tempo. (143)

## 2-MERCAPTOQUINOLINE

Mice

- (2) I.P. 300 mg/kg before irr. 800 r.  
 (3) Protective effect absent. (451)

## 2-MERCAPTOCYCLOHEXYLAMINE HCl

White mice, female, strain H, weight 17 g

- (2) Before irr. 900 r.  
 (3) Survival 34.5%; all controls died. (330)

## MERCAPTOETHANOL

Phage T 2

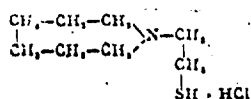
- (2) 0.2-200 mM in 4% bouillon before irr. with doses up to 300 krad with presence of 2mM  $O_2$ , or in anoxia.
- (3) With anoxia, protected even with 1-2 mM concentrations. In presence of  $O_2$ , marked protection given only by concentrations from 20 mM and higher. (542)

## beta-MERCAPTOETHYLAMINE BITARTRATE

Yeasts Saccharomyces vini, Megri strain 139 B

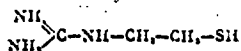
- (2)  $1 \cdot 10^{-3}$  M 15-20 min. before irr. 30, 45, 60 kr (1000 r/min).
- (3) Only concentration 1 M protected from death with DRF=2.25. (185)

## N-(beta-MERCAPTOETHYL)-HEXAMETHYLENIMIN HYDROCHLORIDE

Yeasts Saccharomyces vini, Megri strain 139 B

- (2)  $10^{-1}$  M 15-20 min. before irr. 30, 45, 60 kr (1000 r/min).
- (3) Did not protect from death. (185)

## 2-MERCAPTOETHYLGUANIDINE

Mice, male, C<sub>57</sub> BL/G line, 10 weeks-old

- (2) I.P. 100, 140, 200, 275 mg/kg 10-15 min. before irr; internally 400 mg/kg 30 min. before irr.
- (3) LD<sub>50/30</sub> in controls,  $668 \pm 10$  r; in experimental animals with I.P. administration,  $831 \pm 10$ ,  $890 \pm 20$ ,  $1065 \pm 8$ , and  $1148 \pm 20$  r respectively; with internal administration,  $1016 \pm 20$  r. (738) See also (743).

Mice, male, C<sub>57</sub> BL/Gj line, weight 18-25 g

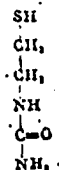
- (2) I.P. 175 mg/kg 10 min. before irr.; internally 400 mg/kg 30 min. before irr. 600, 800, and 1000 r.
- (3) In control animals the absorption of oleic acid from the intestines correlated with doses of irr: 71.9, 57.1, and 29.1%. In experimental animals with dose 800 r, 65.9%; with 1000 r, 59.3%. Preparation more effective with internal administration. (739) See also (437a, 630a, 669).

## 2-MERCAPTOETHYLDITHIOCARBAMIC ACID

Mice

- (2) 350 mg/kg 15 min. before irr. 800 r.
- (3) Survival in experimental group, 75%; in controls, 0%. (474a)

## beta-MERCAPTOETHYLUREA

Rats

- (2) I.P. 300 mg/kg 10 min. before irr.; 60 min. before irr.; internally 1000 mg/kg 30, 60, and 120 min. before irr.
- (3) Survival in the first group, 55%; in the second, 40%; in the third, 0%; in controls--4%. (267)

## N-(2-MERCAPTOETHYL)-PYPERIDINE

No entry

- (2) No entry.
- (3) (669).

## SODIUM METABISULFITE

No entry

- (2) No entry.
- (3) (70a).

## N-METAANISYLIDENE-beta-MERCAPTOETHYLAMINE

Mice

- (2) S.C. in some doses, one a maximum dose, 30 min.-3 hours before irr. in absolute lethal doses.
- (3) Protective effect absent. (312)

## METHANE

Germinating seeds of beans Vicia faba

- (2) In calorimetric bomb, 2-15 atm. of methane added to 1 atm. of air and held 10 min. before, during, and 5 min. after irr. 200 r (50 r/min).
- (3) Corresponding to concentrations growth inhibition decreased with 15 atm., speed of growth was 1.7 times higher than with irr. in air. (225)

## METHANEDIAMINE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).
- (3) Survival of experimental animals 85% by 30th day after irr. (501a)

## N-METATOLUIDYL-beta-MERCAPTOETHYLAMINE

Mice

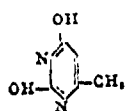
- (2) S.C. in some doses, one a maximum dose, 30 min.-3 hours before irr. with absolute lethal doses.
- (3) In experimental groups, survival 30-50%; in controls--0%. (312)

## SODIUM METAPHOSPHATE

Mice

- (2) I.P. 10-60 min. before irr. 1025 r.
- (3) Protective effect observed. (377)

## METACYL, 4-METHYL-URACIL

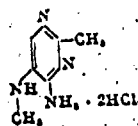
White mice, with transplanted Erlich carcinoma

- (2) Internally 80 mg/kg daily during 5 days before irr. of tumor 2485 r.
- (3) Preparation showed radiosensibilizing effect. (243)

Mice with subcutaneous Erlich carcinoma or melanoma

- (2) No entry.
- (3) (242).

## 2-METHYL-4-AMINO-5-AMINO-METHYL PYRIMIDIN DIHYDROCHLORIDE

White mice

- (2) I.P. 500 and 750 mg/kg 10-15 min. before irr. 700 r.
- (3) Survival corresponding to doses of preparation: 20 and 0%; all controls died. (154)

## 1-METHYL-4-AMINO-URACIL-5-ISOTHIURONIUM BROMIDE

Phage Fl, producing lysis of intestinal rod bacteria, strain 600

- (2) 0.01 mM in phage suspension before gamma-irr. Co<sup>60</sup> 5000 r (500 r/min).
- (3) Survival 1.8%; in controls--0.4%. (326)



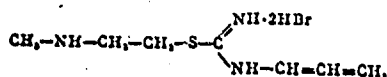
## 3-METHYL-4-AMINOURACIL-5-ISOTHIURONIUM BROMIDE

Phage F 1, producing lysis of intestinal rod bacteria, strain 600

(2) 0.01 mM in phage suspension before gamma-irr.  $Co^{60}$  5000 r (500 r/min).

(3) Survival 7-5.9%; in controls, 0.03-0.4%. (326)

## S-(beta-METHYLAMINOETHYL)-N-ALLYLTHIOUREA DIHYDROBROMIDE

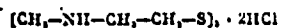


Yeasts Saccharomyces vini, Megri strain 139 B

(2)  $10^{-2}$  M 15-20 min. before irr. 30, 60, and 45 kr. (1000 r/min).

(3) Did not protect from death. (185)

## bis-(N-METHYLAMINOETHYL)-DISULFIDE DIHYDROCHLORIDE



Yeasts Saccharomyces vini, Megri strain 139 B

(2)  $10^{-2}$  M 15-20 min. before irr. 30, 45, 60 kr (1000 r/min).

(3) Did not protect from death. (185)

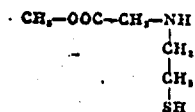
## 1,3-METHYL-5-beta-AMINOETHYLURACIL BROMHYDRATE

White mice

(2) I.P. 500 and 750 mg/kg 10-15 min. before irr. 700 r.

(3) Protective effect absent. (154)

## CYSTEAMINE METHYLACETATE HCl

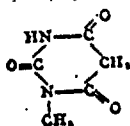


Yeasts Saccharomyces vini, Megri strain 139 B

(2)  $10^{-2}$  and  $10^{-3}$  M 15-20 min. before irr. 30, 45, 60 kr. (1000 r/min).

(3) Did not protect from death. (185)

## 3-METHYLBARBITURIC ACID



Phage F 1 producing lysis of intestinal  
rod bacteria, strain 300

(2) 0.1 mM in phage suspension with gamma-irr. Co<sup>60</sup> 5000 r  
(500 r/min).

(3) Survival 0.01%. (326)

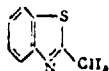
2-METHYL-4-BENZYLAMINOPYRIMIDINE

White mice

(2) I.P. 50 mg/kg 10-15 min. before irr. 700 r.

(3) Protective effect absent. (154)

2-METHYL-BENZOTHAZOLE

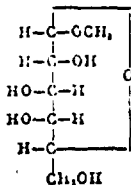


Mice

(2) I.P. before irr. 800 r.

(3) Insignificant antiradiation effect. (451)

METHYLGALACTOSIDE

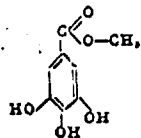


Bacteria Escherichia coli K 12

(2) No entry.

(3) Protected from death. (634)

METHYLGALLATE



Mice, rats

(2) 30-60 min. before irr.

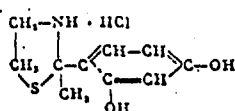
(3) Survival in experimental animals, 23.3% by 30th day;  
in controls, mortality 98-100%. (79)

Mice

(2) 60 mg/kg 30 min. before irr. 600 r.

(3) Survival in experimental animals 23.3%; in controls,  
1.6%. (78a)

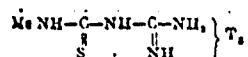
2-METHYL-2-(1', 3'-HYDROXYPHENYL)-THIAZOLIDINE HYDROCHLORIDE



Yeasts *Saccharomyces vini*, Megri strain, 139 B

(2)  $10^{-2}$  M 15-20 min. before irr. 30, 45, 60 kr (1000 r/min).

(3) Did not protect from death. (185)

METHYLGUANYLTHIOUREATOLUENE-p-SULFONATE

Mice, male, Swiss line, weight 21 g

(2) I.P. 8 mg/mouse 5-10 min. before irr. 900 r.

(3) Survival 18%; in controls, 2%. (753)

3-METHYL-4,5-DIAMINO-URACIL

Phage F 1 causing lysis of intestinal rod bacteria, strain 600

(2) 0.01 and 0.02 mM in phage suspension with gamma-irr.  $\text{Co}^{60}$  5000 r (500 r/min).

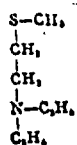
(3) Survival corresponding to concentrations 4.5 and 5%; in controls, 0.53 and 0.07%. (326)

2-METHYL-4,6-DIBENZYL-MINOPYRIMIDINE

White mice

(2) S.C. 100 and 150 mg/kg 10-15 min. before irr. 700 r.

(3) Protective effect absent. (154)

S-METHYL-n-DIETHYL-beta-MERCAPTOETHYLAMINE

White mice

(2) I.P. in 2-3 doses, one a maximum dose, 5-15 min. before irr. 700 r.

(3) 2-3 experimental animals survived out of 10; all controls died. (311)

METHYLENE BLUE

Bacteria *Escherichia coli* 0111

(2)  $10^{-2}$  and  $10^{-3}$  M with irr. 15 and 40 kr.

(3) Protective effect absent. (519)

Tissue culture of chicken embryo intestine

- (2) 4 hours in solution 1:4000 before irr. 6.4 kr.
- (3) a deoxidizing form, but not an oxidizing one, prevented or delayed development of necrosis. (567)

Testicular tissue culture of chicken embryo

- (2) 4 hours in solution 1:4000 before irr. 6.4 kr.
- (3) Did not protect from death. (567)

Sections of undifferentiated carcinoma of mice

- (2) 0.01 or 0.001 M 20 min. with irr. in vitro.
- (3) Increased radiosensitivity. Frequency of tumor implantations decreased. (502)

Chicken embryos

- (2) 0.2 ml, 1:1000 solution 4 hours before irr. of the head area of 48-hour-old embryo.
- (3) Deoxidizing but not the oxidizing form protected against cyclocephalia and anophthalmia. (566)

Rats with Yoshida sarcoma

- (2) Before or after irr.
- (3) Decrease in mitosis of tumor cells independent of time of administration. (732)

## METHYLENE BLUE, leuko-form

Chicken embryos, 9-10 days old

- (2) 1:4000, before irr. of intestines and ovaries of embryo with doses from 4800 to 64,000 r.
- (3) In experimental group, necrosis of organs arrested in 50-80% of cases. (567)

## 4-METHEYL-2-IMIDAZOLINONE

Mice, C<sub>3</sub>H line, 12-18 weeks old

- (2) I.P. dose LD<sub>50</sub> 50 min. before irr. 750 r (80 r/min).
- (3) Antiradiation effect not observed. (720)

## 3-METHYL-5-CARBOXYCYTOSINE

Mice, male, CF<sub>1</sub> line, weight 2-25 g

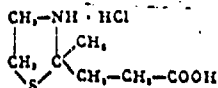
- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).
- (3) By 11th day after irr. all experimental animals died. (501a)

## 2-METHYL-5-CARBOXYETHYL-4-OXYPYRIMIDINE

White mice

- (2) I.P. 150 and 300 mg/kg 10-15 min. before irr. 700 r.
- (3) Antiradiation effect absent. (154)

## 2-METHYL-2-CARBOXYETHYLTHIAZOLIDINE HYDROCHLORIDE

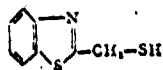


Yeasts Saccharomyces vini, Megri strain 139 B

(2)  $10^{-1}$  -  $10^{-2}$  M 15-20 min. before irr. 30, 45, 60 lr (1000 r/min).

(3) Did not protect from death. (185)

## 2-METHYLMERCAPTOBENZOTHAZOLE



Mice

(2) I.P. 50-200 mg/kg before irr. 800 r.

(3) Antiradiation effect absent. (451)

## 1-METHYL-2-MERCAPTOIMIDAZOLE

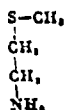


Mice and rats

(2) No entry.

(3) Length of life of experimental animals higher than in controls; leukopenia expressed to a lesser degree. (581)

## S-METHYL-beta-MERCAPTOETHYLAMINE



White mice

(2) I.P. in 2-3 doses, one a maximum dose, 5-15 min. before irr. in absolute lethal doses. (700 r)

(3) 4-6 experimental animals survived out of 10; all controls died. (311)

## N-METHYL-N'-2-METHYLALLYLTHIOUREA

Mice

(2) Before irr. 800 r.

(3) 7 died out of 10; all controls died. (451)

## 4-METHYL-5-METHYLISOTHIURONIUM URACIL-CHLORIDE

Phage F 1 causing lysis of intestinal rod bacteria, strain 600

(2) 0.01 mM in phage suspension with gamma-irr.  $\text{Co}^{60}$  5000 r (500 r/min).

(3) Survival in controls 0.03-0.53%. (326)

## METHYLMETHIONINE

Mice

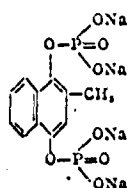
- (2) Before and after irr. 550 r.
- (3) Protective and therapeutic effect observed. (583)

## METHYLMETHIONINESULFONIUM CHLORHYDRATE

Rats

- (2) I.V. 660 mg/kg during 5 days before irr. or 10 days after irr. 600 r.
- (3) Normalization of thrombocyte content. (793)

## 2-METHYL-1,4-NAPHTHOHYDROQUINONE-SODIUM DIPHOSPHATE; sinkavit

Tissue culture of chicken embryo

- (2)  $3 \times 10^{-6}$  M 16 hours with irr. 244 r.
- (3) Investigations 24, 36 and 48 hours after irr. showed increased inhibition of mitosis. Mitotic index 24 hours after irr. decreased from 64.9 to 14.0%. With addition of preparation to non-irradiated controls the mitotic index was 69.3%. (651)

Rats with 256 Walker carcinoma

- (2) I.V. 30 min. before irr. of carcinoma with 1100 r (158 r/min).
- (3) Markedly increased radiation effect on tumor. (650a)

## METHYL ALCOHOL

Bacteria Escherichia coli K 12

- (2) 0.2 - 2.5 M 15-30 min. before, with irr. 45,000 r (60,000 r/min) (sic).
- (3) Maximum protection from death achieved with 1.5 M or higher concentration. (634)

Tadpoles of Rana esculenta

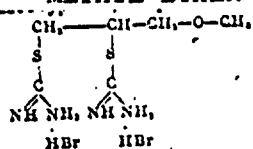
- (2) 2.5% 5 min. before and during irr. 27,500 r (1100 r/min).
- (3) Average life span rose from 4 to 8 days. (703) See also (704).

Germinating seeds of beans Vicia faba

- (2) 0.9 - 1.9 M 10 min. before, during, and 5 min. after irr. 200 r (50 r/min).

- (3) Maximum protection against growth inhibition showed by 1.6 concentration. The speed of growth with this concentration was approximately 1.6 times higher than in controls. (225)

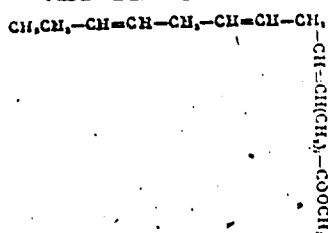
METHYL ETHER-2,3-DI-(ISOTHIURONIUM) PROPANOL



White mice

- (2) I.P. 25 and 37.5 mg/kg 10-15 min. before irr. 700 r.  
(3) Survival 10 and 0% respectively; in controls, 0%. (343)

METHYL ESTER OF LINOLEIC ACID



Mice, Wistar line, weight  $26 \pm 4$  g, 6-7 weeks old

- (2) I.P. 1 ml 1 hour after irr. 625 r ( $\text{LD}_{50/30}$ ).  
(3) Observed inhibition of cell regeneration in testes and inhibition of secretory activity of seminal vesicles. Weights of spleen and thymus were less in experimental group than in control group. (624)

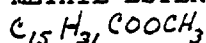
METHYL ESTER OF OLEIC ACID



Mice, Wistar line, weight  $26 \pm 4$  g, 6-7 weeks old

- (2) I.P. 1 ml 1 hour after irr. 625 r ( $\text{LD}_{50/30}$ ).  
(3) Observed increase in cellular regeneration in testes and increase in secretory activity of seminal vesicles. Weight of spleen and thymus higher in experimental group than in controls. (624)

METHYL ESTER OF PALMITIC ACID

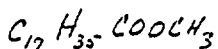


Mice, Wistar line, weight  $26 \pm 4$  g, 6-7 weeks old

- (2) I.P. 1 ml 1 hour after irr. 625 r ( $\text{LD}_{50/30}$ ).  
(3) Observed inhibition of cellular regeneration in testes and inhibition of secretory activity of seminal vesicles. Weight

of spleen and thymus less in experimental group than in controls. (624)

# METHYL ESTER OF STEARIC ACID



Mice, Wistar line, weight  $26 \pm 4$  g, 6-7 weeks old

(2) I.P. 1 ml 1 hour after irr. 625 r ( $LD_{50/30}$ ).

(3) Observed acceleration of cellular regeneration in testes and increase of secretory activity of seminal vesicles. Weight of spleen and thymus higher in experimental group than in controls. (624)

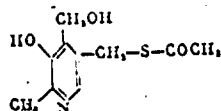
# METHYL ETHER (or ESTER) OF STELLINE

## Rats

(2) 100 mg/kg before gamma-irr.  $Co^{60}$  700 r (irr. time 104 sec).

(3) Antiradiation effect absent. (267)

# 2-METHYL-3-OXY-4-HYDROXYMETHYL-5-ACETYL MERCAPTOMETHYL-PYRIDINE

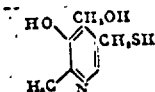


## Mice

(2) I.P. 5 mg/20 g 5 min. before irr.

(3)  $LD_{50}$  of experimental animals rose from  $641.8 \pm 5.8$  to  $758.4 \pm 16.1$  r. (578)

# 2-METHYL-3-OXY-4-HYDROXYMETHYL-5-MERCAPTOMETHYLPYRIDINE

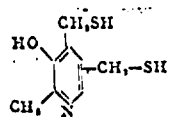


## Rats

(2) Internally 100 mg/20 g 1 hour before irr.

(3)  $LD_{50}$  of experimental animals  $622.1 \pm 20$  r; in controls--  $517.6 \pm 29.6$  r. (578)

# 2-METHYL-3-OXY-4,5-DIMERCAPTOMETHYL-PYRIDINE

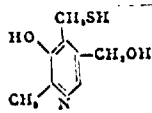


## Mice

(2) I.P. 1 mg/20 g 5 min. before irr. 640 r.

(3) Protective effect absent. (578)

# 2-METHYL-3-OXY-4-MERCAPTOMETHYL-5-OXYMETHYL-PYRIDINE

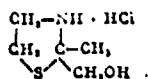




Mice

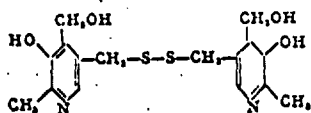
- (2) I.P. 7 mg/20 g 5 min. before irr.
- (3) LD<sub>50</sub> of experimental animals 670.3 ± 13.7 r; in controls--641.2 ± 5.2 r. (578)

## 2-METHYL-2-OXYMETHYL-THIAZOLIDINE HYDROCHLORIDE

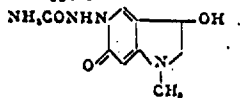
Yeasts Saccharomyces vini, Megri strain 139 B

- (2) 10<sup>-1</sup> - 10<sup>-2</sup> M 15-20 min. before irr. 30, 45, and 60 kr (1000 r/min).
- (3) Did not protect from death. (185)

## bis-(2-METHYL-3-OXY-4-OXYMETHYL-PICOLYL)-DISULFIDE

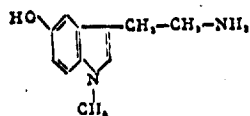
Mice

- (2) I.P. 5 mg/20 g 5 min. before irr. 568 r.
- (3) Protective effect absent. (578)

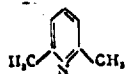
1-METHYL-3-OXY-5-SEMICARBAZONE-6-OXO-2,3,5,6-TETRAHYDROINDOLE;  
"Adona"Mice

- (2) Internally after irr. 700 r.
- (3) In experimental group, survival higher than in controls. (547)

## 1-METHYL-5-OXYTRYPTAMINECREATINE SULFATE

Mice, weight 17 g

- (2) I.P. 50 mg/kg 5 min. before irr. 900 r.
- (3) Protective effect absent. (455)

6-METHYL- $\alpha$ -PICOLINE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

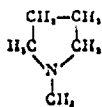
- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).
- (3) Mortality 95% in the experimental group by 30th day after irr. (501a)

#### 2-METHYLPYPERIZINE DITHIOFORMATE

Mice

- (2) 15 min. before irr. 600 r.
- (3) Antiradiation effect observed. Criterion: change in the DNA level in small intestine. (688)

#### n-METHYLPYRROLIDINE



Mice, male, CF<sub>1</sub> line, weight 20-25 g

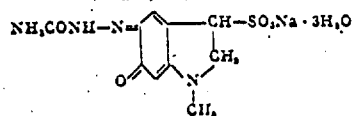
- (2) Internally 250 mg/kg 24 hours before irr. 600 r (120 r/min).
- (3) By 13th day after irr. all experimental animals died. (501a)

#### n-METHYLRHODANINE

Mice

- (2) I.P. 100, 200, mg/kg before irr. 800 r.
- (3) Antiradiation effect absent. (451)

1-METHYL-5-SEMICARBAZONE-6-OXO-2,3,5,6-TETRAHYDROINDOLE-3-SULFOACID · 3H<sub>2</sub>O-SODIUM SALT; Al=17; tanabe



Mice

- (2) After irr. 700 r.
- (3) In experimental group survival higher than in controls. (547)

#### METHYLTESTOSTERONE

Mice, female, strain H

- (2) I.P. 1 mg immediately after gamma-irr. Co<sup>60</sup> 1000 r 38-46 r/min).
- (3) By 7.5 days all experimental and control animals had died. (179)

White mice and rats, male and female

- (2) Internally 0.1-10 mg, once or twice, 5-10 days before and 1 hour after gamma-irr.  $\text{Co}^{60}$  650-700 r for mice and 700-750 r for rats.
- (3) Protective effect absent. (94)

Mice, male, strain H

- (2) I.P. 1.0 mg 10 days before gamma-irr.  $\text{Co}^{60}$  1000 r (33-46 r/min).
- (3) Within 5.5 days after irr. all experimental animals died; in the same period of time mortality in controls, 91.7%. (179)

## 2-METHYL-THIAZOLINE

No entry

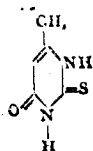
- (2) No entry.
- (3) (776).

## 1-METHYL-THIONEIMIDAZOLINE

Mice, C<sub>3</sub>H strain, 12-13 weeks old

- (2) I.P. 0.5 LD<sub>50</sub> 5 min. before irr. 750 r (80 r/min).
- (3) Protective effect absent. (720)

## METHYLTHIOURACIL

Mice, strain H

- (2) I.P. 10 mg/mouse before gamma-irr.  $\text{Co}^{60}$  700 r (50 r/min).
- (3) Mortality in experimental group 58.4%; in controls--75%. (182)

Mice, rats

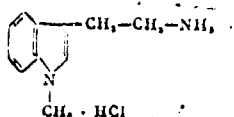
- (2) No entry.
- (3) Protective effect absent. (581)

## beta-METHYLTRYPTAMINE HYDROCHLORIDE

White mice

- (2) I.P. 81.7 mg/kg before irr. 700 r.
- (3) Mortality 94.2%; in controls--95-100%. (111)

## 1-METHYLTRYPTAMINE HYDROCHLORIDE

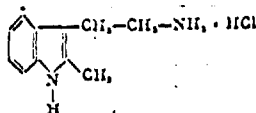


White mice

(2) I.P. 81.7 mg/kg before irr. 700 r.

(3) Mortality 90%; in controls--95-100%. (111)

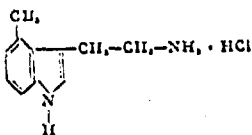
## 2-METHYLTRYPTAMINE HYDROCHLORIDE

White mice

(2) I.P. 81.7 mg/kg before irr. 700 r.

(3) Mortality 93%; in controls--100%. (111)

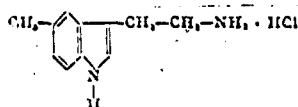
## 4-METHYLTRYPTAMINE HYDROCHLORIDE

White mice

(2) I.P. 81.7 or 54.5 mg/kg before irr. 700 r.

(3) Mortality 69.7 and 35% respectively; in controls--95-100%. (111)

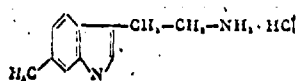
## 5-METHYLTRYPTAMINE HYDROCHLORIDE

White mice

(2) I.P. 81.7 or 54.5 mg/kg before irr. 700 r.

(3) Mortality 74.3 and 61.5% respectively; in controls, 95-100%. (111)

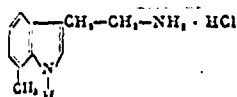
## 6-METHYLTRYPTAMINE HYDROCHLORIDE

White mice

(2) I.P. 81.7 or 54.5 mg/kg before irr. 700 r.

(3) Mortality 70 and 97% respectively; in controls, 95-100%. (111)

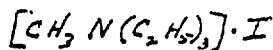
## 7-METHYLTRYPTAMINE HYDROCHLORIDE

White mice

(2) I.P. 81.7 mg/kg before irr. 700 r.

(3) Mortality 95%; in controls--95-100%. (111)

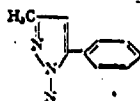
## METHYLTRIETHYLAMMONIUM IODIDE



White mice, male, weight 18-20 g

- (2) S.C. 15-20 min. before or 20-30 min. after irr. 500 r.
- (3) Survival 66% with administration before irr., and 32% with administration after irr., in controls, 35%. (272)

## 3-METHYL-5-PHENYL-PYRAZOLE; femerazol



White mice, weight 18-20 g

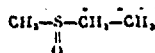
- (2) Internally as aqueous emulsion 250 mg/kg 15 and 30 min., 1, 2, 3, 4, 6, and 24 hours before irr. 700 r.
- (3) Survival corresponding to times of administration: 0, 0, 10, 10, 15, 20, 5, and 0%; in controls, 10%. (108)

## METHYLCYSTEAMINE HCl

Yeasts Saccharomyces vini, Megri strain, 139 B

- (2)  $10^{-1}$  -  $10^{-2}$  M 15-20 min. with irr. 30, 45, 60 kr (1000 r/min).
- (3) Concentration  $10^{-1}$  M protected from death with DRF=1.2. (185)

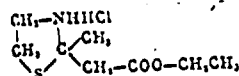
## METHYL-ETHYLSULFOXIDE



Mice

- (2) I.P. 3000 mg/kg 30 min. before irr. 1007 rad (71.6 rad/min).
- (3) Did not protect from death. (369)

## 2-METHYL-2-ETCARBOXYMETHYLTHIAZOLIDINE HYDROCHLORIDE



Yeasts Saccharomyces vini, Megri strain 139 B

- (2)  $10^{-3}$  M 15-20 min. before irr. 30, 45, 60 kr (1000 r/min).
- (3) Did not protect from death. (185)

METHIONINE; ametionol, amurex, ationon, atstetion, hepation, hepationin, hepionin, diprin, lobamin, menin, meonin, neometidin, pedamet, thiomedon

Erythrocytes

- (2)  $3 \times 10^{-3}$  M with irr.
- (3) Protected from hemolysis less than cysteine, but better than alanine. (469)

Bacteria Escherichia coli 0111

- (2)  $10^{-2}$  and  $10^{-3}$  M with 15 and 40 kr.  
 (3) Did not protect from death. (519)

Mice

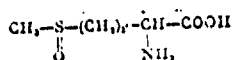
- (2) After irr. 700 r.  
 (3) Antiradiation effect absent. (547)

Mice

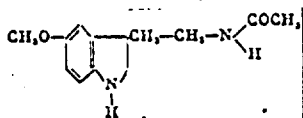
- (2) 5.25 and 250 mg/kg 5 min. before or 30 min. after irr.,  
 or 5 mg/kg twice a day for 5 days before and 30 min.  
 after irr. 700-800 r.  
 (3) Protective effect absent. (373) See also (511, 583).

Rats

- (2) 5 mg/kg 30 min. after irr.  
 (3) Protective effect absent. (373)

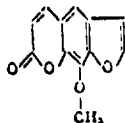
DL-METHIONINE-SULFOXIDEMice

- (2) I.P. 3250 mg/kg 30 min. before irr. 1007 rad ( $\text{LD}_{99/30}$ ).  
 (3) Survival with  $\text{LD}_{99/30}$  rose to 20%. (369)

5-METHOXY-omega-N,N-ACETYLTRYPTAMINEMice, weight 17 g

- (2) I.P. 50 mg/kg 5 min. before irr. 900 r.  
 (3) Protective effect absent. (455)

8-METOXYPSORALEN; ammoidin, meladinin, lemeloquin, metoxazalen,  
 metoxy zalen, metoxin, oxoralen, xantoxin, 8-MOR, 3-(6'-oxy-7-methoxy-  
 benzofuranyl-(5'-7-)) delta-lactone of acrylic acid

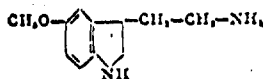
White mice, female, 6-8 weeks old

- (2) Before irr. 600 r.  
 (3) By 18th day 7 out of 12 controls died; of 12 experimental  
 mice, 6 died. (572)

Mice, male, CF<sub>1</sub> line, weight 20-25 g

- (2) Internally 250 mg/kg 24 hours before irr. 600 r 20 r/min).
- (3) By the 30th day after irr. 90% of experimental animals had died. (501a)

5-METOXYTRYPTAMINE



Thymocytes of rats

- (2) Solution 1:4000 or 1:40,000 in cell suspension in Ringer solution with irr. 1300 r.
- (3) Survival rose from 66.4 to 75.2% with small concentration; from 63.1 to 85.3% with larger concentration. (6)

White mice

- (2) I.P. 150, 100, 75, 25, 5 mg/kg before irr. 700 r.
- (3) Survival 25, 55, 69.3, 40, 10% respectively; all controls died. (156)

White mice

- (2) S.C. 200 and 75 mg/kg 20-30 min. before irr. 700 r.
- (3) Survival respectively 70 and 60%; all controls died. (156)

White mice

- (2) Internally 300 mg/kg 20-30 min. before irr.; 250 mg/kg 1 hour before irr.; 250 mg/kg 3 hours before irr.; 250 mg/kg 4 hours before irr. 700 r.
- (3) Survival 40, 40, 17.5, 12.5% respectively; all controls died. (156)

White mice, weight 18-22 g

- (2) I.P. 75 or 50 mg/kg before irr. 700 r.
- (3) Survival respectively 60 and 40%; all controls died. (155)

White mice, male and female, weight 18-23 g

- (2) I.P. 75 mg/kg 20-30 min. before irr. 700 r; with gamma-rays Co<sup>60</sup> 850 r; with protons 660 Mev 1300-1550 rad.
- (3) Survival in the first group 65%; in the second--45%; in the third--46 to 33%. First group controls--survival 1.4%; in the remaining groups all controls died. (355)

Black mice, C<sub>57</sub>

- (2) I.P. before irr. 500-550 r.
- (3) In remote periods after irr. leukosis in experimental animals encountered 2-3 times less than in controls. (285)

White mice, without lineage

- (2) I.P. before irr. 500-550 r.

- (3) In remote periods after irr. myeloid leukosis observed in experimental as well as in control animals. (285)

Mice

- (2) After irr. 700 r.  
(3) Protection of blood-forming tissue observed. (170)  
See also (348, 713).

White rats, weight 150-200 g

- (2) I.P. 15 mg/kg before irr. 800 r.  
(3) Survival in experimental group 60%; in controls, 6.6%. (135)

White rats

- (2) I.P. 20, 15, 10 mg/kg 5-10 min. before irr. 800 r.  
(3) Survival 63.3, 60.55%; in controls--6.6%. (156)

White rats

- (2) Internally 100 mg/kg 20-30 min. before irr. 800 r.  
(3) Survival 50%; in controls--6.6%. (156)

5-METOXYTRYPTAMINE HYDROCHLORIDE

White mice, male, weight 21-23 g

- (2) I.P. 1.5 mg/mouse 10-15 min. before irr. with pulse beam of protons with energy 660 Mev, average density flux  $10^8 - 10^9$  protons/cm<sup>2</sup> in one sec. (300-400 rad/min).  
(3) By 30th day after irr. with dose 1310 rad., 5 experimental animals out of 14 survived; in controls with 1180 rad., all animals died. (356)

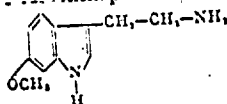
White rats, male

- (2) I.P. 0.05 mm/kg 5 min. before irr. 900 r.  
(3) Survival in experimental animals 90%. (762)

Rats, male

- (2) I.P. 15 mg/kg 15 min. before irr. 650 r.  
(3) Decreased DNA depolymerization in liver during the first 6 hours after irr. (132a)

6-METOXYTRYPTAMINE



Thymocytes of rats

- (2) 1:4000 and 1:40,000 in cell suspension in Ringer solution with irr. 1300 r (80 r/min).  
(3) Survival rose from 67.8 to 73.5% with a smaller, and from 63.1 to 88.8% with a larger concentration. (6)

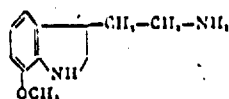


White mice

(2) I.P. before irr. 700 r.

(3) Antiradiation effect almost absent. (156)

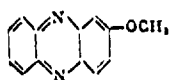
## 7-METHOXYTRYPTAMINE

White mice

(2) I.P. before irr. 700 r.

(3) Protective effect absent. (156)

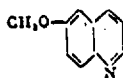
## 2-METHOXYPHENAZINE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

(2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).

(3) By 30th day after irr. 75% of experimental animals had died. (501a)

## 6-METHOXYQUINOLINE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

(2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).

(3) By 30th day after irr. 95% of experimental animals died. (501a)

## 2-METHOXYETHYL ETHER OF CYSTEINE

White rats, male(2) I.P. 100 mg/100 g before gamma-irr. Co<sup>60</sup> 750 r.

(3) Survival 80%; in controls--3%. (354)

FAR EAST MIDII (T.N. Translation not found) (DRY PREPARATION FROM MOLLUSKS)

Rats, dogs(2) Internally 0.5 g/rat and 4.0-6.0 g/dog during 14, or 30-40 days before gamma-irr. Co<sup>60</sup> of rats 650 r. Preparation was administered to dogs therapeutically during the period of irradiation with subacute irr. 20 r. per day, up to total dose of 500 r.

(3) Out of 39 experimental rats, 8 survived, out of 39 controls, 2. With "subacute" radiation injury in dogs, the preparation somewhat improved the blood-formation. (316)

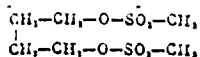
## BLACK SEA MIDII (hydrolysate from mollusks)

Rats, dogs

- (2) Internally 0.5 g/rat and 4.0-6.0 g/dog during 14, or 30-40 days before gamma-irr.  $\text{Co}^{60}$  of rats 650 r. Preparation was administered to dogs therapeutically during the period of irradiation with subacute irr. 20 r. per day, up to total dose of 500 r.

- (3) Protective effect absent. (316)

MILERAN; buzulfan, mizulban, mitosan, myelosan, myerlan, misulban, sulfabutin, 1,4-bis-(methyl-sulfonyl-oxy)-butane

Mice

- (2) No entry.

- (3) (783).

## MYOL

Mice, female, strain H

- (2) I.P. 0.3 ml immediately after gamma-irr.  $\text{Co}^{60}$  1000 r (33-48 r/min).
- (3) Mortality in 5.5, 7.5, and 10 days after irr., 83.3, 91.7, and 100%. All controls died within 5.5 days. (179)

## MYTOMYCIN C

Rats with MTK-III sarcoma

- (2) I.P. 0.01 mg/100 g immediately or 1 hour after irr.
- (3) More marked inhibition of mitosis in sarcomatous cells. (731)

## MYELOCYTOTOXIC SERUM; MCS

Dogs

- (2) S.C. 0.01 ml/kg or I.V. 0.002 ml/kg on 2nd, 3rd, and 4th day after irr. 500-400 r.
- (3) Radiation sickness had more severe form in experimental animals. (278) See also (279a).

## MILK

Guinea pigs, dogs

- (2) Before irr.
- (3) Protective effect. (252)

## SOUR MILK

Dogs

- (2) Fed sour milk after irr. 440-800 r.
- (3) Normalization of blood sugar content in experimental animals. (194)

Dogs

- (2) Irr. 800 r.
- (3) Life span of experimental animals higher than that of controls. (14)

Dogs

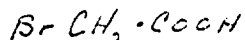
- (2) After irr. 440 or 800 r.
- (3) Decrease in mortality and body weight loss. (199)  
See also (36).

## MILK, ACIDOPHILUS-YEAST

Rats

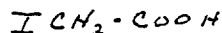
- (2) During 10 days before irr. 550 r and after irr.
- (3) Survival 40%; in controls--17%. (26)

## MONOBROMOACETIC ACID

Mice

- (2) 20 mg/kg 30 min. before irr. 500 r.
- (3) Survival 19.5%; on controls--34.3%. (708)

## MONOIOD ACETIC ACID

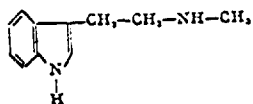
Rabbit erythrocytes

- (2)  $10^{-4}$  -  $10^{-3}$  M 30 min. before or after irr. 159 kr (5300 r/min).
- (3) Increased hemolysis and also promoted the activation of aldolase in cells, and in precipitate when added before, but not after, irr. (709)

Mice

- (2) 18 mg/kg 30 min. before irr. 500 r.
- (3) Survival 10.6%; in controls--34.3%. (708) See also (655).

## N-MONOMETHYL-TRYPTAMINE- HYDROCHLORIDE

White mice

- (2) I.P. 50 mg/kg before irr. 700 r.
- (3) Antiradiation effect absent. (111)

## MONOTHIO-GLYCERINE

Human and pig erythrocytes

- (2)  $3 \times 10^{-3}$  -  $3 \times 10^{-4}$  M in neutral solution before or after irr. (1100 r/min).

- (3) Protected from hemolysis when added before, but not after, irr. (471)

#### MORAMIN-S(preparation of indispensable amino acids)

##### Mice, male

- (2) Immediately before irr. 550 r (18.6 r/min).  
 (3) More rapid disappearance of DNA and RNA disorders in liver cells. (584)

##### Rabbits

- (2) Before irr. 100-1000 r.  
 (3) In the second week after irr. serum cholinesterase somewhat less inhibited in the experimental group than in controls. (458)

##### Mice

- (2) S.C. 1-10 days before irr. 400 r.  
 (3) Observed some increase in the number of leukocytes and reticulocytes in peripheral blood of experimental animals. (661)

#### MORPHINE

##### White mice, male and female, weight 18-23 g, 8-12 weeks old

- (2) S.C. 1.25 mg/mouse at various times before gamma-irr. Co<sup>60</sup> 900 r (450 r/min).  
 (3) Antiradiation effect correlated with the changes of oxygen contents of spleen and liver. (150)

##### White mice, male and female, weight 18-20 g

- (2) 1.25 mg/mouse at various times before gamma-irr. Co<sup>60</sup> 900 r.  
 (3) Maximum protective effect with administration 20-90 min. before irr. (84) See also (61a).

##### Mice, male, strain H

- (2) I.P. and S.C. 1 mg immediate before gamma-irr. Co<sup>60</sup> 1000 r (38-46 r/min).  
 (3) 7.5 days after irr., mortal 91.7%; all controls had died by that time. (179)

##### White mice

- (2) 3 mg/mouse before irr. 700 r.  
 (3) Survival 20%; in controls--0%. (109)

#### N-MORPHOLYL-beta-MERCAPTOETHYLAMINE

##### Mice

- (2) I.P. in some doses, one a maximum dose, 5-15 min. before irr. with absolute lethal doses.  
 (3) Protective effect absent. (312)

## n-MORPHOLINYL-CYSTEAMINE

White rats

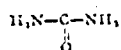
- (2) I.P. 200-300 mg/kg 8-10 min. before gamma-irr.  $\text{Co}^{60}$  750 r.
- (3) Survival 37-45%; in controls--3%. (256)

## N-MORPHOLINYL-CYSTEAMINE HYDROCHLORIDE

Rats, male, weight 200-250 g

- (2) I.P. 200 mg/kg 10 min. before gamma irr.  $\text{Co}^{60}$  750 r (7.5 r/sec).
- (3) Tendency toward decreased urinary secretion of dishepolozhitelnykh compounds. (268)

## UREA

Bacteria Pseudomonas sp.

- (2) 10% solution 6 min. before irr. in nitrogen.
- (3) Protected from death. (402)

Paramecium caudatum

- (2)  $2 \times 10^{-4}$  -  $6 \times 10^{-3}$  M before, or  $4 \times 10^{-4}$  M after gamma-irr.  $\text{Co}^{60}$  200 kr. (248-275 r/sec).
- (3) Did not effect restoration of division temp observed during the first 5 days after irr. (248)

Paramecium caudatum

- (2)  $6 \times 10^{-5}$  -  $6 \times 10^{-3}$  M before, during or after gamma-irr.  $\text{Co}^{60}$  200 kr (248-275 r/sec).
- (3) Decreased survival and tempo of division corresponded to concentrations when added before, but not after irr. (247)

## FORMIC ACID

Bacteria Escherichia coli K 12

- (2) During irr.
- (3) Protected from death. (634)

MUSCLE TISSUE (homogenate, obtained from newborn rats, or large cattle)

Rats, male and female, weight 140-200 g

- (2) After irr. 500 r.
- (3) Thromboplastic blood activity was the same in the experimental and control animals. (249)

## NARINGIN

Mice, male; Webster line, weight 11-14 g

- (2) Kept on special ration with addition of 2 or 4% naringin during 6 weeks before irr.; during the period of fractional irr., and 135 days after irr. Irr. lasted 6 weeks, 200 r per week.
- (3) average life span respectively =  $31.4 \pm 6.3$  days and  $91.2 \pm 8.0$  days; in controls --  $66.6 \pm 8.2$  days. (463)

Dogs

- (2) Before irr. 350 r.
- (3) Out of 6 experimental animals, 3 survived; out of 37 controls, 15. (465a)

## SODIUM NITRITE

Bacteria Escherichia coli 0111

- (2)  $10^{-2}$  and  $10^{-3}$  M before irr. 15 and 40 hr.
- (3) Did not protect from death. (519)

White mice, male and female, weight 18-20 g

- (2) S.C. 3.5 mg/mouse at various times before gamma-irr.  $\text{Co}^{60}$  900 r.
- (3) Well expressed protective effect observed 20-90 min. after administration of preparation. (84)

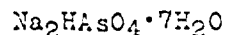
Mice, male, strain H

- (2) I.P. and I.V. 2 mg immediately before gamma-irr.  $\text{Co}^{60}$  1000 r (38-46 r/min).
- (3) By 7.5 days after irr. all experimental and control animals had died. (179)

Mice, infected with pneumococcus

- (2) Before or after irr.
- (3) Mortality decreased with administration before irr.; not effective after irr. (551a)

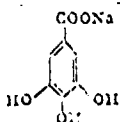
## SODIUM ARSENATE



Mice, female, weight 20-25 g

- (2) I.P. 12.5 mg/kg 24 hours before irr. 800 r.
- (3) 40% survival by 30th day after irr.; all controls died by 21st day. (725)

SODIUM GALLATE; sodium salt of gallic acid, sodium salt of 3,4,5-trioxybenzoic acid



Mice, rats

- (2) In 0.75% phosphate buffer solution 30-60 min. before irr.
- (3) 46.7% survival by 30th day after irr.; in controls, 0-2%. (79)

Mice

- (2) 60 mg/kg 30 min. before irr. 600 r.
- (3) Survival of experimental animals, 50.8%; in controls, 1.6%. (79a)

Mice

- (2) Immediately or 1-2 hours after irr.
- (3) Antiradiation effect observed. (78)

SODIUM GLYCOLATE

Human and pig erythrocytes

- (2)  $3 \times 10^3$  and  $3 \times 10^4$  M in neutral solution before and after irr. (1100 r/min).
- (3) Did not protect against hemolysis. (471)

Rats

- (2) 60 mg/kg before irr. 750 r.
- (3) Faster restoration of nucleic acid content in organs of experimental animals than in controls. (39a)

SODIUM LACTATE



Rabbits

- (2) I.V. 10% solution daily after irr. 2500 r.
- (3) Experimental animals died by 12-13 day after irr.; controls by 6-7th day. (325) See also (165a, 325a).

NUCLEIC ACID SODIUM

No entries for this drug

SODIUM CHLORIDE

Mice

- (2) S.C. physiological solution, in various doses, and at various times after irr. 550 and 650 r.

(3) Survival 78 and 9% respectively; in controls--29 and 0%. (590)

# NAPHAZOLINE

## Mice

(2) Before irr. 700 r.

(3) Marked protective effect. (358)

# NAPHTHALINE; 1,4,5,8-tetracarboxylic acid

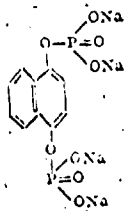


## Mice, female

(2) I.P. mg/kg (TN. dose not given) 10 min. before irr. 1025 r.

(3) Out of 10 experimental animals 6 survived; all controls died. (377a)

# 1,4-NAPHTHOHYDROQUINONE DIPHOSPHATE TETRASODIUM SALT

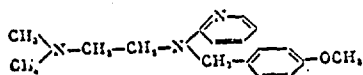


## Rats with Walker 256 carcinoma

(2) I.V. 30 min. before irr. of carcinoma 1100 r (158 r/min).

(3) Radiosensitizing effect absent. (650a)

NEOANTERGAN; allergan, antallergan, antizan, dorantamin, diaminid, izamin, coradon, criptin, mepyraminmaleate, mepiramon, mepiran, paraminal, paramenil-maleate, piranizaminmaleat, renstamin, stamin, statomin-maleate, tilogen, n,n-dimethyl-n'-(2'-pyridyl)-n'-(p-metoxymethyl)-ethylenediamine



## Black mice, C57, weight 5 g, 8 days old

(2) I.P. 2.5 mg/mouse and S.C. 5 mg/mouse 15 min. before irr. 550 r.

(3) Epilatory radiation effect identical in experimental and control animals. (710)



## NEODYMIUM (oxides and nitrates)

Rats

(2) I.P. 400 mg/kg before gamma-irr.  $\text{Co}^{60}$  800 r.

(3) Protective effect absent. (846)

## 1,3-bis-(p-NITROPHENYL)-2-(p-CARBETOXYPHENYL)-GUANIDINE

Mice

(2) I.P. 200-750 mg/kg before irr. 800 r.

(3) Protective effect absent. (451)

## NEOMINOPHAGEN C

Mice

(2) No entry.

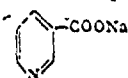
(3) Insignificant protective action observed. (515)

Mice and rats

(2) Daily after irr. of mice (800 r) and rats (400 r).

(3) Decreased mortality; prevented development of leukopenia. (199a)

## SODIUM NICOTINATE

Cats

(2) S.C. 5 mg/kg twice daily for 20 days after irr. 800 r.

(3) Increased phagocytic activity; no difference in the survival of animals. (337a)

## NICOTINIC ACID

Ascites Erlich carcinoma

(2) With irr. in vitro 20 kr.

(3) Did not protect from death. (573)

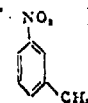
## NITROGUANIDINE

White mice, male, weight 18-20 g

(2) Internally 0.025 g/mouse 20-30 min. before, immediately, or 30 min. after gamma-irr.  $\text{Co}^{60}$  700 r.

(3) Protective and therapeutic effect absent. (41)

## 4-NITRO-alpha-PICOLINE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

(2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).

- (3) 95% of experimental animals died by the 30th day after irr. (501a)

#### 4-NITRO-beta-PICOLINE



Mice, male, CF<sub>1</sub> line, weight 20-25 g

- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).  
 (3) 93.8% of experimental animals died by 30th day after irr. (501a)

#### 2-NITROPHENYL-DIETHYLDITHIOCARBAMATE

Mice

- (2) I.P. 50 mg/kg before irr. 800 r.  
 (3) Insignificant increase of survival. (451)

#### 2-NITROPHENYLTHIOURACIL

Mice

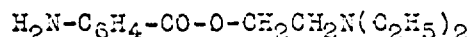
- (2) Before irr. 800 r.  
 (3) Increased survival. (776)

#### 3-NITRO-1-PHENOXAZINECARBOXYLIC ACID

Yeasts Saccharomyces vini

- (2)  $1 \times 10^{-8}$  M/ml with gamma-irr. Co<sup>60</sup> 50,000 r.  
 (3) Protective effect absent. (114)

NOVOCAINE; abdocain, ambocain, aminocain, aristocain, analgocain, anectocain, arecan, atoxycocain, bagocain, biocain, bernacain, galecain, genocain, gravocain, gerocain, gipnin, dentoan, dorecain, isocain, irocain, localan, marecain, minocain, minol, naucain, odentocain, pancain, plenofial, polocain, protocain, procain, resorcain, sintocain, topocain, tubocain,



Mice, female, strain H

- (2) I.P. immediately after gamma-irr. Co<sup>60</sup> 1000 r (32-46 r/min).  
 (3) Mortality on 5.5, 7.5, and 10 days after irr., respectively 50, 75, 83%; all controls died within 5.5 days. (179)

Mice R.A.P.

- (2) S.C. 2 mg or I.P. 1.5 mg/20g before gamma-irr. Co<sup>60</sup> 900 r.  
 (3) Survival by 30th day respectively 30 and 11%; all controls died. (416)

Mice, rats, dogs

- (2) Internally with prophylactic and therapeutic aim.  
 (3) Increased survival and weakened hemorrhagic syndrome. (147)

Guinea pigs

- (2) S.C. 0.04 g 45-60 min. after local irr. of two fields on both sides of the body, 850 r. each. (Shaul' apparatus).
- (3) Injury lessened 60-80%. Development of destructive skin changes either arrested or absent. Benevolent effect on growth of hair. (396)

Guinea pigs

- (2) No entry.
- (3) (163).

Rabbits

- (2) S.C. 2.0 ml 2% solution; retrobulbar 0.5 ml 2% solution 1 day after gamma-irr. Co<sup>60</sup> 1000 r and 1500 r.
- (3) In the first phase of radiation sickness, the pathohistological changes in cornea and iris were less manifest. (51)

Rabbits

- (2) I.V. 1-2 ml 1% solution 40 min. after irr., 2 hours after irr., and then for 7 days, once daily, after total irr., 1000 r.; or after irr. of trunk with head screened 1300 r.; or after irr. of the head with screened trunk 3000 r.
- (3) With general irr. 6 animals survived out of 13; 6 outlived controls by 1-8 days; in one case, one treated rabbit died before a control rabbit. All controls died within 5-14 days. With screened head 4 animals survived out of 14, two died simultaneously with controls; the remaining rabbits outlived the controls by 2-8 days. All controls died. With irr. of head only, novocain did not show protective effect. (177) See also (25, 163).

NORADRENALINE; levarterenol, levofed, norepinephrine, norepineran, norescadrin, norefol, norlcvodin, urosympatin

Bacteria Escherichia coli 0111

- (2)  $10^{-2}$  and  $10^{-3}$  M before irr. 15 and 40 kr.
- (3) Survival increased from 50 to 62% only with irr. with smaller dose. (519)

Thymocytes of rats

- (2)  $10^{-3}$  M 20 min. before and after irr. in vitro 500 rad.
- (3) Survival rose from 47 to 77%; protection after irr. authors consider as insignificant. (494)

Human kidney cells (tissue culture)

- (2) 0.01 M - 3.3 mM 10-30 min. before irr. 500-1500 r (200 r/min).
- (3) Did not protect from death. (802)

Bone marrow cells of mice, C<sub>57</sub> BL/Rij line

- (2) 4 mM 15 min. before and during irr. in vitro 300 r (51 r/min).

- (3) Did not protect from death. Criterion for protection: survival of mice irradiated with 798 r ( $LD_{100/130}$ ), and receiving I.V. suspension of bone marrow under investigation. (745)

Mice

- (2) 5 min. before irr. 675-1200 r.  
(3) Protective action correlated with the degree of decrease in spleen oxygen consumption. (790)

Mice

- (2) Before irr. 700 r.  
(3) Marked protective effect. (388)

Mice

- (2) I.P. 2.5 mg/kg 5 min. before irr. 600 r.  
(3) Average life span of experimental animals 15.2 days; controls--10.1 days. (454a)

Guinea pigs

- (2) No entry.  
(3) (183).

Rabbits

- (2) No entry.  
(3) (728).

## NUCLEIC ACIDS

No entry

- (2) No entry.  
(3) (628).

## OZONE

 $O_3$ White mice, male, NA-2 line, weight 18-20 g

- (2) 1 unit per 1 mln, for one hour during 10 days before irr. 800 r.  
(3) Out of 20 experimental animals, 8 survived; all controls died. (559a)

## NITRIC OXIDE

## NO

Free phage T 2, phage T 2 monocomplex, and bacteria Escherichia coli

- (2) 15, 50 or 150 mM during irr. with doses up to 300 krad.  
(3) 15 and 50 mM with irr. of monocomplex increased phage destruction. Even the concentration of 150 mM did not

change the survival of free phage. (542)

Bacteria Shigella sonnei

- (2) 1 mM 60-70 min. before irr. in  $O_2$ , or  $N_2$ , up to 25 krad (3000 rad/min).
- (3) Increased lethal action of irr. (620) See also (437b).

CARBON MONOXIDE

CO

Seeds of onion Allium cepa

- (2) From 5 min. to 6 hours in light or in darkness between first dose 1100 r. in vacuum, and second dose 800 r in air. (1600 r/min).
- (3) Count of two-hit chromosome aberrations showed that CO prevents post-radiation restoration. Light to a large degree obliterates the action of CO. (421)

Seeds of beans Vicia faba

- (2) 95% CO + 5%  $O_2$  in darkness, or in light during 1 hour between the first dose 150 r and the second 150 r (200 r/min).
- (3) Darkness prevented post-radiation restoration. Criterion: two-hit chromosome aberrations. (821)

Tradescantia paludosa

- (2) 95% CO + 5%  $O_2$  during and 15 min. after irr. or 15 min. 32 seconds after irr. in 5%  $O_2$  + 95% He 400 r (400 r/min).
- (3) During irr. and in the first 5 min. after irr., number of two-hit chromosome aberrations increased. (381)

Yeasts, haploid, aerobic, and fermenting mutants

- (2) Irr. in CO.
- (3) Survival same as with irr. in pure nitrogen. (823)

Drosophila

- (2) 5% CO + 95%  $O_2$  during 7 hours after irr., in air, of impregnated females 2000 r (96 or 1920 r/min).
- (3) The frequency of sex-linked lethal mutations unchanged. (420)

Drosophila virilis

- (2) During irradiation of pupae 1000 r (173 r/min), or 30 min. after irr. of males 1000 r (1000 r/min).
- (3) Irr. of pupae--the frequency of translocations and of dominant lethal mutations in all the stages of oogenesis increased. After irr. of males, frequency of dominant lethal mutations did not change; the frequency of translocations increased somewhat during the period of postmitotic spermatogenesis which is most sensitive to radiation. (361)

Drosophila virilis

- (2) 95% CO + 5% O<sub>2</sub> 9 hours after irr. 500 r (330 r/min) or 100% CO, or 98% CO + 2% O<sub>2</sub> during irr. 1000 r.
- (3) Administration after irr., or during irr., had no effect on frequency of lethal mutations during various phases of spermatogenesis, but sharply increased the number of lethal mutations with administration during irr. in the presence of O<sub>2</sub>. (736)

Mice

- (2) 15 min. before gamma-irr. Co<sup>60</sup> 900 r (565 r/min); during irr. animals were in 0.5% CO atmosphere.
- (3) Survival 75%; all controls died. In experimental animals, mitotic activity of cornea was reestablished more rapidly. (341)

White mice, male and female, weight 18-20 g

- (2) Animals in medium containing 0.5% CO during 1, 3, 5, 10, and 15 min. and irr. with gamma-rays immediately after their stay in CO, or 3, 5, 10, and 15 min. after. Dose 900 r.
- (3) Maximum protective effect with irr. immediately following stay in CO for 15 minutes. With irr. 10 min. after CO poisoning, protective effect almost absent. (84)

White rats, male, weight 150-180 g

- (2) During irr. 750 r (COHb, 50-60%/CO and Hemoglobin<sup>7</sup>), or again after irr. on the 2nd, 3rd, and 4th day (COHb-78-80%).
- (3) In the first group 9 animals survived out of 10; in the second group 5 survived out of 10; all controls died. (314)

White rats, male, weight 120-150 g

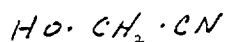
- (2) 11 mg/l immediately, and then on the 2nd, 3rd, and 4th day after irr. 550 r.
- (3) Length of life of experimental animals higher than that of controls. (162)

## OXALIDON, CIS-AND TRANS-

Paramecium caudatum

- (2) In subtoxic concentrations with irr. 10,000 r (460 r/min).
- (3) Cis-isomer protected somewhat better against inhibition of division tempo than trans-isomer. (143)

## OXYACETONITRILE

Mice

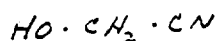
- (2) 7.5 mg/kg before irr. 800 r.
- (3) Out of 10 experimental animals, 8 survived; all controls died. (451)

No entry

(2) No entry.

(3) Showed antiradiation effect under action of neutrons. (477)

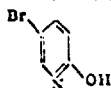
## OXYBENZTHIAZOLE

Paramecium caudatum

(2) In subtoxic concentrations with irr. 10,000 r (460 r/min).

(3) Did not protect against inhibition of division. (143)

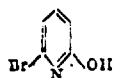
## 2-OXY-5-BROMOPYRIDINE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

(2) I.P. 250 mg/kg 24 hours before irr. 600 r (20 r/min).....

(3) By 30th day after irr., 90% of experimental animals had died. (501a)

## 2-OXY-6-BROMOPYRIDINE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

(2) I.P. 250 mg/kg 24 hours before irr. 600 r (20 r/min).

(3) By 30th day after irr., 85% of experimental animals had died. (501a)

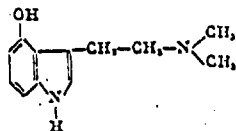
## 4-OXYBUTYRATE SODIUM

Mice

(2) I.P. 1 g/kg 30 min. before, and immediately after irr. 750-1150 r.

(3) Increased survival of experimental animals. (437b)

## 4-OXY-omega-N,N-DIMETHYLTRYPTAMINE

Mice

(2) I.P. 50 mg/kg 5 min. before irr. 900 r.

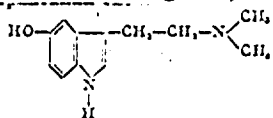
(3) Protective effect absent. (455)

## 4-OXY-N,N-DIMETHYLTRYPTAMINE PHOSPHATE

White rats, male

(2) I.P. 0.05 mM/kg 5 min. before irr. 900 r.

(3) Protective effect absent. (762)

5-OXY- $\omega$ -N,N-DIMETHYL TRYPTAMINE BIOXALATE

Mice, weight 17 g

(2) I.P. 50 mg/kg 5 min. before irr. 900 r.

(3) Survival 5%; in controls, 2.5%. (455)

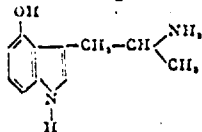
beta-OXY-beta-(2,5-DIMETOXYPHENYL)-ISOPROPYLAMINE; metoxamine

Mice

(2) .P. 1, 10, or 25 mg/kg, 5, 15, or 60 min. before irr. 900 r.

(3) Protective effect only with 10 and 25 mg/kg doses. (746)

## 4-OXY-alpha-METHYLTRYPTAMINE BIMALEINATE



Mice, weight 17 g

(2) I.P. 50 mg/kg 5 min. before irr. 900 r.

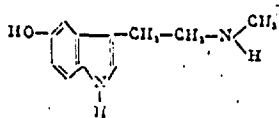
(3) Protective effect absent. (455)

## 2-OXY-4-METOXYBENZOPHENONE

Rats

(2) I.P. 125 mg/kg; internally 50 and 350 mg/kg 20-25 min. before gamma-irr. Co<sup>60</sup> 600 and 700 r (572-522 r/min).

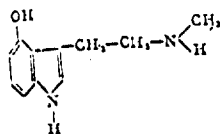
(3) Survival 50-70%; in controls, 32-37%. (Dose 600 r)  
With 700 r the preparation had little effect. (254)

5-OXY- $\omega$ -N,N-MONOMETHYLTRYPTAMINEBIOXALATE

Mice, weight 17 g

(2) I.P. 5 min. before irr. 900 r.

(3) Survival 100%; in controls--2.5%. (455)

4-OXY- $\omega$ -N,N-MONOMETHYLTRYPTAMINEOXALATE

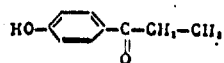
Mice, weight 17 g

(2) I.P. 50 mg/kg 5 min. before irr. 900 r.

(3) Protective effect absent. (455)



## OXYPROPIOPHENONE



White rats, male, weight 200-240 g

(2) I.P. 0.3 g/kg 10 min. before irr. 650 r.

(3) Protective effect absent. (269)

## OXYTETRACYCLINE

Chicks

(2) Daily 0.7 mg/kg during 30 days irr. 500 r (14 r/min).

(3) (620a).

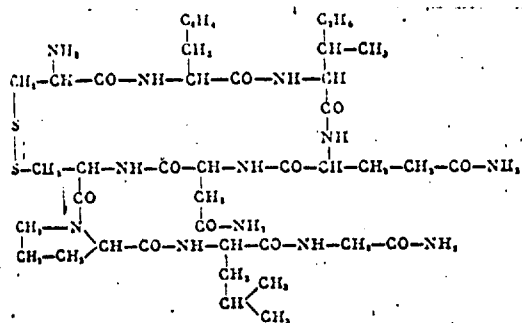
## 2-OXYTHIAZOLE

White mice, weight 17 g

(2) I.P. 1 or 50 mg/kg 5, 30, or 70 min. before irr. 900 r.

(3) Protective effect absent. (455)

## OXYTOCIN; alpha-hypofamin, otsitotsin, partokon, syntotsinon

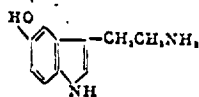


Mice

(2) 5 min. before irr. 650 r.

(3) Length of life increased. (372)

5-OXYTRYPTAMINE; antemovis, DS substance, serotonin, thromocytin, thrombotonin, enteramin, 5oxy-3-(beta-aminoethyl)-indole, 5-HT.



Bacteria Escherichia coli 0111

(2)  $10^{-2}$ ,  $10^{-3}$  M before irr. 15 and 40 kr.

(3) Survival rose; from 50% to 75%; and from 0% to 20%. (519)

Chicken embryos

(2) 0.8 mg into embryonic sac 1-240 min. before irr. 850-1000 r (100 r/min).

(3) Did not protect from death. (660)

Thymocytes of rats

- (2)  $10^{-3}$  M before irr. in vitro 300 r.
- (3) Did not protect from death. (394)

Human kidney cells (tissue culture)

- (2) 0.5-8 mM 10-30 min. before irr. 500-1500 r (200 r/min).
- (3) Did not protect from death. (802)

Cells of Erlich ascites carcinoma

- (2) 0.008 M at pH=7 10-15 min. before irr. in vitro 2 kr (1064 r/min).
- (3) Tumor transplantability in rats 75%; in controls--3%. (517)

Ascites Erlich carcinoma

- (2) With irr. in vitro 20 kr or I.P. with local irr. in vivo 5000 r.
- (3) Protection especially marked in vitro, tumor transplantation successful in almost 100% cases. (573)

Crocker sarcoma

- (2) I.P. with local irr. in vivo 5000 r.
- (3) Did not protect; criterion: tumor weight. (573)

Mice, inbred strain, weight 20 g

- (2) I.P. 1 mg/mouse 5 min. before irr. 810 r.
- (3) Survival 96%; in controls--4%. (603)

White mice

- (2) I.P. 55 mg/kg before irr. 700 r.
- (3) Mortality 35%; in controls--95-100%. (111)

White mice

- (2) I.P. 100, 75, 50, 25 mg/kg before irr. 700 r.
- (3) Survival respectively 30, 51.2, 15, 0%; all controls died. (156)

White mice

- (2) Internally 250 mg/kg 30 min. before irr. 700 r.
- (3) By 30th day after irr. all experimental and control animals died. (156)

White mice

- (2) I.P. 50 mg/kg 10 min. before irr. 700 r.
- (3) Survival 50%; all controls died. (112)

White mice, weight 18-20 g

- (2) S.C. 0.3 mg/mouse 5-10 min. before irr. 700 r., or gamma-irr. Co<sup>60</sup> 1050, 1150, and 1300 r.
- (3) Survival with roentgen irr. 23%; with gamma-irr. corresponding to doses, 28, 6 and 1.5%; all controls died. (289)

Mice, inbred strain, weight 20 g

- (2) I.P. 1 mg/kg 5 min. before the second irr. (120 r/min).
- (3) Marked protective effect. (604)

Black mice, C<sub>57</sub>, weight 5 g, 8 days old

- (2) S.C. 5 min. before irr. 550 r.
- (3) Epilatory effect of radiation absent; general epilation observed in 19 out of 20 controls. (710)

Mice

- (2) 1 mg 5 min. before irr. 690 r.
- (3) Lesser metabolic disturbance. Criterion: urinary secretion of tryptophan metabolites. (607)

Mice

- (2) 1 mg/mouse 15 min. before irr.
- (3) LD<sub>50</sub> in controls 612 r; in experimental group--1098r. (605)

Mice

- (2) I.P. 10 mM 7-10 min. before irr. 800 and 1100 r.
- (3) Survival with 800 r. 50-65%; all controls died from 650 r dose. With 1100 r protective effect absent. (806)

White mice, male and female, weight 18-23 g

- (2) I.P. 50 mg/kg 5-10 min. before irr. with protons with energy 660 Mev in dose 1200-1300 rad.
- (3) Survival 20-21%; all controls died. (355)

Mice

- (2) 50 mg/kg before irr.
- (3) Marked antiradiation effect. Criterion: survival. (561)

Mice

- (2) No entry.
- (3) (718, 795).

Rats

- (2) I.P. 5 x 10<sup>-6</sup> M 5 min. before irr. 1000 r.
- (3) By 30th day after irr., 22 experimental animals survived out of 35; all controls died. (786)

Rats

- (2) I.P.  $5-7.5 \times 10^{-6}$  M 5 min. before, or immediately after irr. 1000 r.
- (3) With administration of doses  $5-7.5 \times 10^{-6}$  M, 9 animals survived out of 10. Ineffective in smaller doses. (787)

Rats, male, weight 150-175 g

- (2) I.P. 200 mg/kg 15 min. before irr. 450 r.; one hour after irr. I.P., administration of 30 mkeurie  $I^{131}$ .
- (3) Thyroid  $I^{131}$  intake the same in experimental and control animals 4, 24, and 48 hours after irr. (794)

Rats

- (2) S.C. 20 mg/mkg daily during 10 days after administration of 0.05 mkeurie/kg  $Po^{210}$ .
- (3) Protective effect absent. (197)

Guinea pigs

- (2) I.P. 5 min. before irr.
- (3) Skin reaction to radiation less pronounced. (623)

No entry

- (2) Prophylactic-therapeutic administration with multiple irradiations with protons.
- (3) Antihemorrhagic effect present. (265) See also (309a, 319, 511, 603a, 621a, 642b, 643, 785a, 790a, 795a).

## 5-OXYTRYPTAMINE CREATININESULFATE

Cells of Erlich ascites carcinoma

- (2) 0.08 mg/ml 10 min. before gamma-irr.  $Co^{60}$  in vitro 400 and 800 r (344-372 r/min) with bubbling through of air or  $N_2$ .
- (3) Tumor size increased and number of chromosome aberrations decreased. Protection less than with anoxia only; in anoxic conditions protection absent (sic). (318)

White mice, male, weight 21-23 g

- (2) I.P. 1 mg/mouse 10-15 min. before irr. with pulse beam of protons with energy 660 Mev, average density flux  $1 \times 10^8 - 1 \times 10^9$  protons/cm<sup>2</sup> sec. Dose: 300-400 r/min.
- (3) By 30th day after irr. with 1200 rad, 3 mice survived out of 14; all controls died. (356)

Mice, female, DAL Swiss line, weight 17 g - 20 g

- (2) I.P. 4 mkM 20-30 min. before irr. 460 r.
- (3) By 60th day after irr. survival 20%; all controls died. (610)

Mice, weight 17 g

- (2) I.P. 50 mg/kg 5 min. before irr. 900 and 1050 r.
- (3) Survival respectively 100 and 65%; in controls, 2,5 and 0%. (455)

Mice

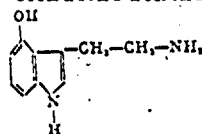
- (2) 1 mg 5 min. before irr. 200-800 r.
- (3) Weight loss of spleen and thymus the same in experimental and control groups. More intensive restoration in experimental animals. (601)

Rats, male

- (2) I.P. 3 mg 5 min. before irr. 590, 690, 800 and 900 r.
- (3) Survival respectively 84, 57, 33, and 8%; in controls-- 58, 4, 0, and 0%. (589) See also (632a).

Guinea pigs, male, albino, weight 350 g

- (2) I.P. 15 mg 5 min. before, or immediately after local irr. 1800 r.
- (3) Antiradiation effect only with administration before irr. Criteria--mitotic activity, epilation. (622)

4-OXYTRYPTAMINOXALATEMice, weight 17 g

- (2) I.P. 50 mg/kg 5 min. before irr. 900 and 1050 r.
- (3) Survival respectively 12.5 and 5%; in controls, 5 and 0%. (455)

5-OXYTRYPTOPHANEMice, inbred strain, weight 20 g

- (2) I.P. 20 mg/kg 1 hour before irr. 810 r.
- (3) Survival 28%; in controls, 4%. (603)

White mice

- (2) I.P. 250 mg/kg 1 hour before irr. 700 r.
- (3) Survival 10%; all controls died. (112)

White mice, guinea pigs, rabbits

- (2) I.P., I.V. or internally at various times after irr.
- (3) Lighter course of radiation sickness. (271)

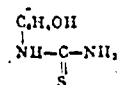
## beta-OXY-beta-PHENYLISOPROPYLAMINE

Mice

(2) I.P. 50 mg/kg before irr. 1000 rad.

(3) Protective effect absent. (746)

## 11-OXYPHENYLTHIOUREA

Mice

(2) I.P. 25, 50 mg/kg before irr. 800 r.

(3) Antiradiation effect absent. (451)

## 2-OXYETHYLAMINOETHYLDITHIOCARBAMIC ACID

Mice

(2) 600 mg/kg 30 min. before irr. 575 r.

(3) Survival of experimental animals 80%; in controls, 20%. (474a)

## 2-OCTAHYDRO-1-AZOCINYL-ETHYLGUANIDINE; C 5864

White mice, weight 20 g

(2) S.C. 1 mg/kg 5 hours, or 10 min. before irr. 800 r.

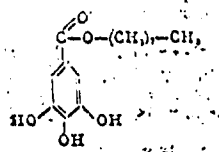
(3) With administration 5 hours before irr., 14 animals survived out of 48; with administration 10 min. before irr., 19 animals survived out of 54; in controls the mortality was 95%. (551)

## OCTAETHYLTETRAMIDE OF PYROPHOSPHORIC ACID; N=CEPP, N=CEPF

Mice(2) S.C. 1/4 LD<sub>50</sub> 3 days before irr. 600 and 800 r. Internally 1/10 LD<sub>50</sub> 7 days before irr. 700 r.

(3) Survival respectively 65, 15, and 55% higher than in controls. (18) See also (174).

## OCTYLGALLATE

Mice

(2) 60 mg/kg 30 min. before irr. 600 r.

(3) Survival 10%; in controls, 1.6%. (78a)

**3-n-OCTYL-5-CARBETOXY-3-THIOURACIL**

Mice, male, CF<sub>1</sub> line, weight 20-25 g

- (2) I.P. 250 mg/kg 24 hours before irr. 600 r (20 r/min).
- (3) Mortality of experimental animals, 90%. (501a)

**OLIVE OIL**

Mice

- (2) I.P. 1 ml 1 hour before irr. 625 r.
- (3) Survival rose 37.5%. (625)

Mice

- (2) I.P. 0.5-1 ml 24 hours before irr. 640-690 r.
- (3) Survival rose 24-43%. (473a)

Rats

- (2) I.V. 24 hours before irr. 735 r.
- (3) Mortality the same in experimental and control animals. (473a) See also (615a).

Mice, Swiss line, weight 26  $\pm$  4 g

- (2) I.P. 1 ml 1 hour before, or 30 min. after irr. 650 r.
- (3) Survival 2 and 20%; in controls, 3%. (367)

**ORNITHINE**

Cells of Erlich ascites carcinoma

- (2) 0.16 - 0.23 mg/ml after irr. 800 r (477 r/min).
- (3) Did not decrease the number of chromosome aberrations. (340)

**OROTIC ACID**

Mice

- (2) No entry.
- (3) (583).

Rabbits

- (2) After irr.
- (3) Preparation had prophylactic and therapeutic effect on hematological disorders caused by radiation. (652)

**N-ORTHOANIZIDYL-beta-MERCAPTOETHYLAMINE**

Mice

- (2) S.C. in some doses, one a maximum dose, 30 min. - 3 hours before irr. with roentgen or gamma-rays in absolute lethal doses.

- (3) Survival 30-50%; in controls, 0%. (312)

N-ORTHOTOLUIDYL-beta-MERCAPTOETHYLAMINE

Mice

- (2) S.C. in some doses, one a maximum dose, 30 min. - 3 hours before irr. with roentgen or gamma-rays in absolute lethal doses.

- (3) Survival 30-50%; in controls, 0%. (312)

ORTHOPHENYLENDIAMINE

Paramecium caudatum :

- (2) In subtoxic concentration with irr. 10,000 r (400 r/min).

- (3) Did not protect against inhibition of division. (143)

PANTOTHENIC ACID; vitamin B<sub>5</sub>

Mice

- (2) 1 mg daily during 14 days with irr. 600 r.; 5 mg daily during 10 days with fractional irr. 60 r/day up to total dose 600 r.

- (3) In the first case mortality decreased from 100 to 30%; in the second instance hematological changes were less pronounced in experimental animals. (685)

Rats

- (2) 30 min. before irr. 600 r.

- (3) Some protective effect observed. (652b)

Mice

- (2) No entry.

- (3) (583). See also (512, 678a).

N-PARAANISIDYL-beta-MERCAPTOETHYLAMINE

Mice

- (2) S.C. in few doses, one a maximum dose, 30 min.-3 hours before irr. with roentgen or gamma-rays in absolute lethal doses.

- (3) Protective effect absent. (312)

PARATHYREOIDINE; paratireocrin

White rats, male, weight 170-180 and 50-70 g

- (2) 2 or 20 units daily during 5-10 days before, or after irr. 500-750 r.

- (3) Protective effect absent. (35)

N-PARATOLUIDINE-beta-MERCAPTOETHYLAMINE

Mice

- (2) S.C. in few doses, one a maximum dose, 30 min-3 hours before



irr. with roentgen or gamma-rays  $\text{Co}^{60}$  with absolute lethal doses.

- (3) Protective effect absent. (312)

#### PARAPHENYLENDIAMINE

Mice, male, strain H

- (2) I.P. 1 mg immediately before gamma-irr.  $\text{Co}^{60}$  1000 r (38-46 r/min).
- (3) In 7.5 days after irr. mortality 91.7%; by that time all controls had died. (179)

#### PARMANYL (7-oxyethyltheophyllin and nucleotides from animal blood)

Rabbits

- (2) During 7 days after irr. 300 r.
- (3) Increased the number of leukocytes and the percentage of granulocytes in the peripheral blood. (672)

#### PENICILLAMINE; beta,beta-dimethylcysteine, alpha-amino-beta-mercaptoisovalerianic acid

Erllich ascites carcinoma

- (2) With irr. in vitro 20 kr, or I.V. with local irr. 5000 r.
- (3) Some protection in vivo; criterion: tumor weight increase. Protection in vitro absent; criterion: tumor transplantability. (573)

White rats

- (2) I.P. 150 mg/kg 8-10 min. before gamma-irr.  $\text{Co}^{60}$  750 r.
- (3) Survival 37-45%; in controls, 3%. (256)

Mice

- (2) No entry.
- (3) (511).

#### PENICILLIN

Seeds of beans *Vicia faba*

- (2) 300 mg/ml 90 min. between irr. with first dose of 600 r in vacuum, and the second of 300 r, in air.
- (3) Does not change the number of two-hit chromosome aberrations, i.e., has no effect on the postirradiation reunion of chromosome fragments. (819) See also (697).

#### 2-PENTAMETHYLENE-3-METHYLTHIAZOLIDINE

Mice, weight 18-22 g

- (2) I.P. 6 mg/kg 10 min. before irr. 725 r.
- (3) Survival in experimental group by 30th day after irr., 4%; in controls, 1%. (566)

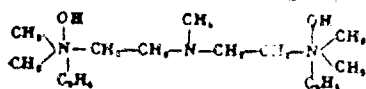
## bis-(PENTAMETHYLENTHIURAM)-DISULFIDE

Mice

(2) I.P. 50, 100 mg/kg before irr. 800 r.

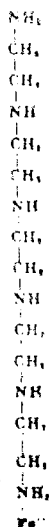
(3) Protective effect absent. (451)

PENTAMINE; azameton, ganlion, hypotensin, pendiomide, pentametezen, N,N,N',N'-3-pentamethyl-N,N'-diethyl-3-aza-penthylene-1,5-diamonium dibromide

White rats

(2) Daily after irr. 900 r.

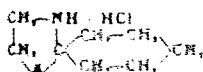
(3) Antiradiation effect absent. (293)

PENTAETHYLENEHEXAMINE; iron-containing complex. Fe content....-10<sup>-3</sup>M/lWhite mice, male, weight 19-22 g

(2) I.P. 200 mg/kg 15 min. before irr. 550 r.

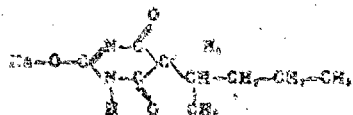
(3) 4 experimental animals survived out of 16; all controls died. (299)

## 2-PENTAMETHYLENE-THIAZOLIDINE HYDROCHLORIDE

Yeasts Saccharomyces vini, Megri strain 139 B(2) 10<sup>-1</sup> - 10<sup>-2</sup> M 15-20 min. before irr. 30, 45, and 60 kr (1000 r/min).

(3) Did not protect from death. (185)

PENTOBARBITAL; isobarb, iturat, mebubarbital, mintal, napental, narcooren, nembutal, palapent, pental, pentodorm, penton, prodormol, sombutal, somnopentil, sopental, embutal, eutatal, sodium salt 5-ethyl-5-(7-methylbutyl)-of barbituric acid, 5-ethyl-5-(1-methylbutyl)-barbiturate of sodium



Mice, CBA and C<sub>3</sub>H line

- (2) 1.2 mg/24 g, with 1 and 2 atm. of air, before irr. 700-825 r.
- (3) Protected from death with 1 atm., and increased mortality with 2 atm. of air. (464)

PENTOXYL

White mice, with transplanted Erlich carcinoma

- (2) Internally 100 mg/kg daily, during 3 days before irr. of tumors, 2485 r or 30 mg/kg 4 days before fractional irr. (three sessions, single dose: 1065 r).
- (3) In the first group tumor growth inhibition, 84%; in controls, 47%; with fractional irr. tumor growth inhibition, 81%; in controls, 59%. (243)

White mice, with transplanted Crocker sarcoma

- (2) Internally 100 mg/kg daily, during 3 days before irr. of tumors 3400 r.
- (3) Radiosensibilizing effect absent. (243)

Mice with "subcutaneous" Erlich carcinoma, or melanoma

- (2) No entry.
- (3) (242).

White rats

- (2) Internally 100 mg/kg 60 and 30 min. before local irr. of thorax 3000 r. without filters (exposure 6 min.).
- (3) Antiradiation effect. Criteria: survival, leukocytic reaction, skin condition at the site of irradiation. (58)

Rabbits, weight 2-3 kg

- (2) Internally 40 mg/kg daily, during 7 days before, and 16 days after irr. 650 r (13.8 r/min).

- (3) Leukopenia less pronounced in experimental animals than in controls. (93)

Dogs, male and female, without lineage,  
weight 12-16 kg

- (2) Internally, 300 mg 3 times a day, during 20 days after irr. 100 r.
- (3) Stimulation of leukopoiesis absent. In bone marrow of experimental animals blood forming cells were lesser in number and more highly damaged. Out of 6 experimental dogs, 5 survived; out of 25 controls--10. (317) See also (168a).

#### HYDROGEN PEROXIDE

H<sub>2</sub>O<sub>2</sub>

Yeasts *Saccharomyces vini*, Megri strain 139 B

- (2)  $10^{-5}$  -  $10^{-1}$  M 15-20 min. before gamma-irr. Co<sup>60</sup> 30 kr (400 r/min).
- (3) Concentration  $10^{-4}$  -  $10^{-5}$  M decreased somewhat the lethal effect of irr., and subtoxic concentration ( $10^{-3}$  M) markedly increased the lethal effect of radiation. (50)

Cells of Erlich ascites tumor

- (2) Tumor cells irradiated with gamma-rays in the presence of hydrogen peroxide in harmless concentrations.
- (3) Transplantation of tumor cells irradiated in the presence of hydrogen peroxide did not result in the death of mice; within the same period of time (2 months) all controls died. (765)

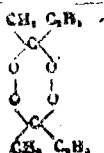
White mice, male, weight 18-20 g

- (2) S.C. 200 mg/kg daily, during 5 days before irr. 550 r.
- (3) Survival and the length of life were less than in controls. (315)

Rats with Yoshida sarcoma

- (2) Before, or after irr.
- (3) Inhibition of mitosis and of chromosome changes in tumor cells of experimental animals considerably more pronounced than in controls. (732)

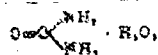
#### METHYLETHYLKETONE PEROXIDE



White mice

- (2) I.P. a minimum lethal dose 30 min. before, or on the 20th day after irr. 550 r.
- (3) Mortality of experimental animals considerably higher than of controls. (315)

## UREA PEROXIDE; hydroperit, perhydrit

Paramecium caudatum

- (2)  $6 \times 10^{-5}$  -  $6 \times 10^{-3}$  M before, during or after gamma-irr.  $\text{Co}^{60}$  200 kr. (248-275 r/sec).
- (3) Lowered the survival and decreased chromosome changes when added before, but not after irr. (247)

Yeasts Saccharomyces vini, Megri strain 139 B

- (2)  $10^{-5}$  -  $10^{-2}$  M 15-20 min. before gamma-irr.  $\text{Co}^{60}$  50 kr (400 r/min).
- (3) Concentration  $10^{-4}$  -  $10^{-5}$  M somewhat decreased, and subtoxic concentration ( $10^{-3}$  M) sharply increased the lethal effect of radiation. (50)

Paramecium caudatum

- (2)  $6 \times 10^{-5}$  -  $6 \times 10^{-4}$  M, before, or  $4 \times 10^{-4}$  M after gamma-irr.  $\text{Co}^{60}$  200 kr. (248-275 r/sec).
- (3) Restoration of division, observed during 5 days after irr., the same as in controls. (248)

Rats

- (2) Administration in doses few times smaller than  $\text{LD}_{50}$  few days before irr.
- (3) Survival 73%; in controls, 48.5%. (230)

## PERISTON

No entry

- (2) No entry.
- (3) (437b<sub>1</sub>).

## POTASSIUM PERMANGANATE

Rabbits

- (2) I.V. 0.5 mg/kg 0.25% solution before, or immediately after irr. 950 r (19.1 r/min).
- (3) Radiosensitizing effect; radiation sickness more severe in experimental animals. (171)

## LIVER OF 20-DAY RABBIT EMBRYOS

Rabbits, male, Chincilla

- (2) I.V.  $1.4 \times 10^9$  cells during 1-3 hours after the last irr. Irr. in 3 doses with 24 hour intervals: 600, 500, 500 r (33.4 r/min).
- (3) By 17th day 60 rabbits survived out of 80; 20 controls died within two weeks after irr. (700)

PICROTOXIN

C<sub>30</sub>H<sub>34</sub>O<sub>13</sub>

No entry

(2) No entry.

(3) (534).

PILOCARPINE

Rabbits

(2) No entry.

(3) (728).

2-PIPERAZINOETHYLDITHIOCARBAMIC ACID

Mice

(2) 400 mg/kg 30 min. before irr. 600 r.

(3) Survival of experimental animals 65%; in controls, 30%.  
(474a)

N-PIPERIDINE-beta-MERCAPTOETHYLAMINE

Mice

(2) I.P. in some doses, one a maximum dose, 5-15 min. before irr. with roentgen or gamma-rays in absolute lethal doses.

(3) Protective effect absent. (312)

2-(3-PIPERIDINEPROPIONAMIDO)-4,4'-DICHLORDIPHENYL SULFIDE MONOHYDRO-CHLORIDE

Mice

(2) I.P. 10-100 mg/kg before irr. 80 r.

(3) Antiradiation effect absent. (451)

PYRAZINE



Mice, male, CF<sub>1</sub> line, weight 20-25 g

(2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).

(3) By 16th day after irr. all experimental animals died. (501a)

PYRATHIAZINE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

(2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).

(3) By 30th day after irr. 95% of experimental animals died.  
(501a)

## PYRATHIAZINE -N,5-DIOXIDE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

(2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).

(3) By 17th day after irr., all experimental animals died. (501a)

## PYRIDAZINE; 1-2 diazine



Mice, male, CF<sub>1</sub> line, weight 20-25 g

(2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).

(3) By 16th day after irr. all experimental animals died. (501a)

## N-[ (2-PYRIDYL-N-OXIDE)-ETHYL ]-3,4,5,-trimethoxybenzamide

Mice, male, CF<sub>1</sub> line, weight 20-25 g

(2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).

(3) 5% of experimental animals survived. (501a)

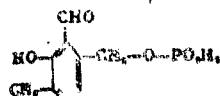
## N-(2-PYRIDYLETHYL)-3,4,5-TRIMETOXYBENZAMIDE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

(2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).

(3) 5% of experimental animals survived. (501a)

## PYRIDOXAL-5-PHOSPHATE



Mice, inbred strain, weight 20 g

(2) I.P. 10 mg/mouse 15 min. before irr. 810 r.

(3) Survival 36%; in controls, 4%. (603)

Mice

(2) 10 mg 15 min. before irr.

(3) LD<sub>50</sub> in controls, 612 r; in experiment, 814 r. (605)

White mice

(2) I.P. 10 mg/ 10-15 min. before irr. 700 r.

(3) Survival 15%; all controls died. (112)

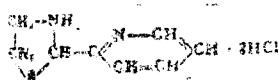
## 1,3-bis-(2-PYRIDYL)-2-(2-DIMETHYLAMINOETHYL)-GUANIDINE-TRICHLORIDE

Mice

(2) I.P. 50, 100 mg/kg before irr. 800 r.

(3) Protective effect absent. (451)

## 2-(2'-PYRIDINE)-THIAZOLIDINE DIHYDROCHLORIDE



Yeast *Saccharomyces vini*, Magri strain 139 B

(2)  $10^{-2}$  and  $10^{-3}$  M 15-20 min. before irr. 30, 45, and 60 hr (1000 r/min).

(3) Did not protect from death. (185)

PYRIDOXYPHEN (product of condensation of phenamine with pyridoxine)

Mice, rats, cats

(2) I.P. at various times before irr. (from 15 min. to 2 hours).

(3) Some protective effect, depending on the time of administration and the irradiation dose. (22)

PYRORACEMIC ACID

Bacteria *Escherichia coli*

(2) 0.5% solution during irr. with doses up to 74,000 r (8 r/sec), or after irr. in culture medium.

(3) Presence during irr. protected from death, and decreased the frequency of streptomycin-resistant mutations. (775)

PYROGALLOL; pyrogallin

Mice, male and female, weight 18-20 g

(2) 5 mg/mouse before gamma-irr.  $\text{Co}^{60}$  900 r.

(3) Protective effect absent. (8')

PSEUDONOMAS PYROGEN

Mice

(2) No entry.

(3) (357a).

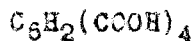
PYROGENAL (preparation from bacterial lipopolysaccharides)

Rabbits

(2) Administered during acute period of radiation sickness, or 3-10 months after irr.

(3) Intensified regeneration processes in bone marrow. (10)

PYROMELLITIC ACID; 1,2,4,5-benzotetracarboxylic acid



Mice, female

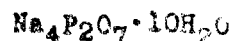
(2) I.P. 12 or 9 mM/kg 10 min. before irr. 1025 r.

(3) With administration of the first dose, 5 mice survived out of 20; with the administration of the second dose, 26 mice



survived out of 40; all controls died. (377a)

# SODIUM PYROPHOSPHATE



## Bacteria Escherichia coli B

(2)  $10^{-3}$  M immediately after irr. 16,000 r, with 30-90 min. incubation at 37°C.

(3) Did not decrease DNA breakdown. (585)

## Mice

(2) I.P. 10-60 min. before irr. 1025 r.

(3) Protective effect observed. (377)

# 2-(3-PYRROLIDINEPROPIONEAMIDO)-4,4'-DICHLORDIPHENYLSULFIDE MONOHYDROCHLORIDE

## Mice

(2) I.P. 750, 1000 mg/kg before irr. 800 r.

(3) Antiradiation effect absent. (451)

# SODIUM PYRUVATE

## Mice, male and female, strain H

(2) I.P. 5 mg immediately after gamma-irr.  $\text{Co}^{60}$  1000 r (38-46 r/min).

(3) Mortality at 5.5, 7.5, and 10 days after irr., 75, 83.3, 91.7%; in controls, mortality 91.7, 91.7, and 100%. (179)

# PITRESSIN

## Rats

(2) I.M. before or after gamma-irr.  $\text{Co}^{60}$  1500 r.

(3) Decreased polyuria. (814a)

# PITUITRIN; hypophen, niten

## Mice, female, strain H

(2) I.V. 0.6 units immediately after gamma-irr.  $\text{Co}^{60}$  1000 r (38-46 r/min).

(3) Mortality in experimental group at 5.5, 7.5, and 10 days after irr., 66.7, 83.3, and 100%; by 7.5 days after irr. all controls had died. (179)

# BLOOD PLASMA

## No entry

(2) No entry.

(3) With fractional irr. up to total dose of 5000 r of animals with tumors, skin changes were the same in experimental and control animals. (688)

PLASMA FROM ANEMIC RABBITS (anemia created by administration of phenylhydrazine or by repeated blood letting)

Mice, male

- (2) Plasma administered 1 and 24 hours after irr. 550 r.
- (3) By 14th day after irr. reticulocyte content,  $7.6 \pm 1\%$ ; in controls,  $4.2 \pm 0.7\%$ . (436)

POLYGLUKIN (6% solution of polymers from native dextran)

Rabbits

- (2) After irr. 660-1000 r.
- (3) Regulatory effect on hemodynamics of irr. animals. (202)

Dogs

- (2) I.V. 10-30 min. after blood letting; irr. 600-700 r.
- (3) Leukopenia and hemodynamic disorders less pronounced in experimental animals. (202)

POLYOXYETHYLENE

Bacteria Escherichia coli K 12

- (2) Present during irr.
- (3) Protected from death. (634)

POLYTAMIN

Mice, male

- (2) Immediately after irr. 550 r (18.6 r/min).
- (3) More rapid normalization of DNA and RNA in liver cells. (584)

POLYCHLORETHYLPHOSPHATE

Mice

- (2) I.P. 0.5-2 mg 24 hours before irr. 700-750 r.
- (3) Protective effect absent. (475)

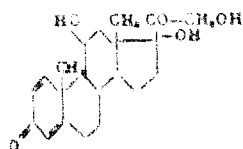
PRASEODYMIUM, oxides and nitrates

Pr

Rats

- (2) I.P. 400 mg/kg before gamma-irr.  $\text{Co}^{60}$  800 r.
- (3) Protective effect absent. (646)

PREDNISOLONE; antizolon, dacortin, decortin-H, dehydrocortizol, deltahydrocortisone, deltolaskon, delta'-hydrocortisone, hydroretrocortin, metacortalon, paracortol, florex, precortalon, stera., sterolon, taracortelon, delta<sup>1-4</sup>-pregnandien-3.20-dion-11 beta-17 alpha-21-triol



#### Rabbits

- (2) I.P. 5 mg during 14 days before local irr. of skin sector with 3000 r dose.
- (3) Dehydrogenase activity of lactic and succinic acid fluctuated sharply in irradiated skin sectors of control animals; the activity of these ferment was decreased in experimental animals. (557) See also 147a).

#### Rats with MTK-III sarcoma

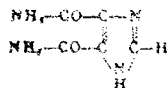
- (2) I.P. 0.1-0.5 mg/100 g 3-5 hours before irr., or immediately after irr.
- (3) With administration before irr., radiosensitivity of sarcomatous cells increased. With administration after irr. effect insignificant. Criterion: mitosis in sarcomatous cells. (638)

#### PRENERGAN

##### Mice

- (2) 5 min. before irr. 675-1200 r.
- (3) Protective effect correlated with the degree of decrease in spleen oxygen consumption. (790)

#### PREPARATION IEM-169



##### White mice, male, weight 18-22 g

- (2) S.C. 100 mg/kg 1 hour before irr.
- (3) By 30th day after irr., out of 111 experimental animals 87 survived; out of 114 controls, 34. (23)

#### PREPARATION Co-2 (preparation from cobalt and derivative of nicotinic acid)

##### Dogs, male and female, without lineage, weight 12-15 kg

- (2) Internally 0.5 mg/kg during 20 days after irr. 400 r.
- (3) Protective effect absent. (137)

PREPARATION Co-4 (preparation from cobalt, derivative of isonicotinic acid and phthivazide)

Dogs, male and female, without lineage  
weight 12-16 kg

- (2) Internally 0.5 mg/kg once a day, during 20 days after irr. 400 r.
- (3) Out of 6 experimental animals, 5 survived; out of 25 controls, 10. Activation of leukopoiesis. (137)

PREPARATION Co-8 (combination of cobalt with vitamin B<sub>1</sub>)

Mice, male and female, weight 18-22 g  
2.5-3 months old

- (2) S.C. 0.1% and 1% solutions 30-50 min. after irr. and daily, during 5 days after gamma-irr. Co<sup>60</sup> 800 r.
- (3) Survival in experimental group 10%; all controls died. (28)

PREPARATION Co-9 (combination of cobalt with vitamin H<sub>1</sub>)

Mice, male and female, weight 18-22 g  
2.5-3 months old

- (2) 0.001 30-50 min. after gamma-irr. Co<sup>60</sup> 800 r. and then during 5 days after.
- (3) Survival 7%; all controls died. (28)

PREPARATION Co-30

Mice, male and female, weight 18-22 g  
2.5-3 months old

- (2) 0.002 30-50 min. after gamma-irr. Co<sup>60</sup> 800 r, and then during 5 days after.
- (3) Survival 10%; all controls died. (28)

PREPARATION Mn-1 (complex compound containing manganese)

White mice, male and female, weight 19-22 g

- (2) 0.1 ml 0.1% solution daily during 5 days; irr. 700 r.
- (3) Survival 56%; in controls--17%. (29)

PREPARATION Zn-1 (complex compound containing zinc)

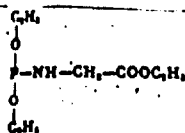
White mice, male and female, weight 19-22 g

- (2) 0.1 ml 0.1% solution daily during 5 days; irr. 700 r.
- (3) Survival 16%; in controls 28%. (29)

White mice, male and female, weight 18-25 g

- (2) I.M. 0.1 ml 0.1% solution 20-30 min. after irr. 700 r., and then daily for 5 days.
- (3) Restorative processes more intensive in the experimental group than in controls 10-15 days after irr. (183)

## PREPARATION No. 83

Mice

- (2) S.C. 1/4 LD<sub>50</sub> 3 days before irr. 600 and 800 r.
- (3) Survival correspondingly 4 and 10% higher than in controls. (18)

## PREPARATION No. 4-Y (methylated product of linolenic acid)

Rabbits, male and female, specie  
"White giant," weight 1500-1900g

- (2) Preparation applied to the skin 5 times during two weeks after irr., calculated 0.05 for 1 cm<sup>2</sup>; control skin sectors treated with vaseline for the same period of time. In another variation applied only twice before irr. Irr. dose: local-9250 r.
- (3) Preparation had neither prophylactic nor therapeutic effect. (206)

## PREPARATION SEP (from bone marrow of large cattle)

Mice, male, weight 20 g

- (2) Internally and parenterally with fractional irr. 1st group--total dose 900 r (400 r., on 55th day--200 r., on 85th day--300 r); 2nd group--total dose 1200 r (500 r.; on 45th day--200 r.; on 60th day--200 r; on 78th day--300 r).
- (3) Survival in the 1st group 48%, in controls--0%; in the 2nd group, by 105th day, survival 56%, in controls--6%. (126)

## PREPARATION FROM CALF SPLEEN, according to Savitsky's method

White rats, weight 180-200 g

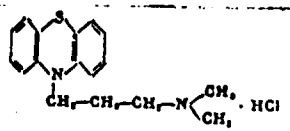
- (2) S.C. 4 mg/kg 1 hour after irr. 600 r.
- (3) Changes in the blood coagulation system (amount of thrombocytes, time of blood coagulation less expressed in experimental animals than in controls. (229)

PROGESTERONE; corliuton, corpomon, resterol, reston, glanducorpin, liucorten, liuteopur, liuteostab, liutocycline, liutoform, liutogil, liutren, liutromon, liutron, progelan, progestin, progeston, singestron,

Mice, male, strain H

- (2) I.P. 2.0 mg 10 days before gamma-irr. Co<sup>60</sup> 1000 r (38-46 r/min).
- (3) By 5.5 days after irr., all experimental animals had died; for the same period of time the mortality of controls 91.76%. (179)

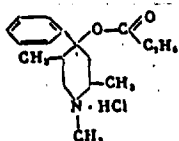
PROMAZINE; ampazine, lipanol, prazin, promazinon, promilen, propazin, protactil, sediston, starazin, talofen, esparin, verofen, WY-1094, 10-(2'-dimethylaminopropyl) phenothiazine hydrochloride



Mice

- (2) S.C. 2.5-10 mg/kg before irr. 500 and 700 r.
- (3) Protective effect absent. (296)

PROMEDOL; 1,2,5-trimethyl-4-phenyl-4-propionoxypiperidine hydrochloride



No entry

- (2) No entry.
- (3) (61a, 95b).

PROMETAZINE; allergan, vallergan, dimapp, diprazin, phenacyl, lergigan, fenergan, pipolfen, proazamin, tirgan

Rats

- (2) Before irr. with lethal dose.
- (3) Survival 50%; in controls--11%. (396)

Rats, male, weight 150-225 g

- (2) I.P. 1 mg/kg before irr. of abdominal area; dose, 1500 r; field size, 11.3 cm<sup>2</sup>; irr. animals were under nembutal narcosis (25 mg/kg I.P.), then 0.4 ml/100 g trypan blue 1% solution administered I.V.
- (3) Vascular permeability in intestines of experimental animals the same as in controls, 24 and 48 hours after irr. (816)

Guinea pigs

- (2) S.C. 40 mg/kg 45-60 min. after local irr. 850 r each of two fields on both sides of body (Shaul' apparatus).
- (3) Decreased radiation injury 60-80%; inhibited skin destruction, improved growth of hair. (396)

PROPANE-1,2,3-TRICARBOXYLIC ACID

Mice, female

- (2) I.P. 18 mm/kg 10 min. before irr. 1025 r.
- (3) 2 experimental mice survived out of 10; all controls died. (377a)

## PROPENPYRIDAMINE

Mice, female, CF<sub>1</sub> line, weight 20-25 g

- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).
- (3) By 30th day after irr. 89.5% of experimental animals died. (501a)

## PROPENPYRIDAMINE-N-OXIDE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).
- (3) By 22nd day after irr. all experimental animals died. (501a)

## PROPERDIN

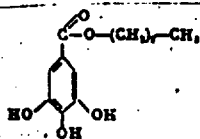
White mice, male and female, weight 18-20 g

- (2) I.V. once 0.5 ml (3000 units/kg) 1 hour, 1, 2, 3, and 4 days after irr. or thrice 2, 3, and 4 days after irr. 750 r.
- (3) 3 days after irr. 2 out of 20 survived in the group of animals receiving the preparation again 3 out of 20 survived; all controls had died by 8-10th day. (69)

White mice

- (2) I.V. or I.P. 0.1 ml (50 units) in buffer, on the 2nd and 4th day after irr. 750 r.
- (3) With I.V. administration survival 22% higher than in controls; with I.P. administration--16% higher. (228)  
See also (338).

## PROPYLGALLATE; propyl ester of gallic acid



Cells of Erlich ascites carcinoma

- (2)  $2 \times 10^{-3}$  M 15 min. before and after gamma-irr. Co<sup>60</sup> 800 r (2500 r/min).
- (3) Number of chromosome aberrations increased. (27)

Mice

- (2) Before irr. with absolute lethal dose.
- (3) Survival 43%. (78a)

Mice

- (2) 60 mg/kg 30 min. before irr. 600 r.
- (3) Survival 43.1%; in controls--1.6%. (78a)

Mice

- (2) I.P. 50 mg/kg before irr. 900 r.
- (3) By 30th day after irr. survival 30% in experimental animals; all controls died by 17th day after irr. (701) See also (702).

Mice, rats

- (2) 30-60 min. before irr. in 0.75% phosphate buffer solution.
- (3) By 30th day after irr. survival, 43.1%; in controls, 0-2%. (79)

Rats

- (2) I.P. 50 mg/kg 15 min. before irr.
- (3) Prevented radiation depolymerization of DNA. (132a)

Rats

- (2) I.P. 60 mg/kg 1.5 h. before irr. 750 r.
- (3) Nucleic acid contents of liver, spleen, and small intestine, on the 3rd day were smaller and on 7-13th day were higher in experimental animals than in controls. (193) See also (39).

## S-PROPYL-N-DIETHYL-beta-MERCAPTOETHYL

White mice

- (2) I.P. in 2-3 doses, one a maximum dose, 5-15 min. before irr. in absolute lethal dose (700 r).
- (3) Protective effect absent. (311)

## PROPYLENEGLYCOL

White mice

- (2) S.C. 0.1 ml 10-15 min. before irr. 700 r.
- (3) Protective effect absent. (154)

White rats, male, weight 200-240 g

- (2) I.P. 4 g/kg 10 min. before irr. 650 r., or intergally 9.5 g/kg 10, 30, or 60 min. before gamma-irr.  $\text{Co}^{60}$  750 r.
- (3) Protective effect absent. (269)

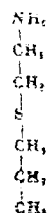
## S-PROPYLISOTHIURONIUM BROMIDE

Mice

- (2) I.P. 250 mg/kg before irr. 1007 r.
- (3) Some protective effect; criterion: survival. (371)

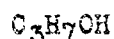


## S-PROPYL-beta-MERCAPTOETHYLAMINE

White mice

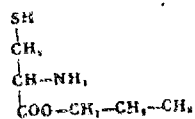
- (2) I.P. in 2-3 doses, one a maximum dose, 5-15 min. before irr. in absolute lethal dose. (700 r)
- (3) 2-3 animals survived out of 10; all controls died. (311)

## PROPYL ALCOHOL

Germinating seeds of beans *Vicia faba*

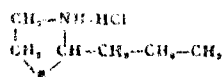
- (2) 0.1-0.35 M 10 min. before, during, and 5 minutes after irr. 200 r (50 r/min).
- (3) Maximum protection (criterion: rapidity of growth) shown by the 0.2 M concentration; with this concentration, the speed of growth was approximately 1.25 times more than in controls. (225)

## 4-PROPYL ESTER OF CYSTINE

Rats

- (2) I.P. with gamma-irr.  $\text{Co}^{60}$  in  $\text{O}_2$  and in air.
- (3) Survival with irr. in  $\text{O}_2$ -50%; with irr. in air--66.6%. The difference in non-protein SH-groups contents of the liver and spleen in both groups statistically not valid. (133)

## 2-PROPYLTHIAZOLIDINE HYDROCHLORIDE

Yeasts *Saccharomyces vini*, Megri strain 139 B

- (2)  $10^{-2}$  -  $10^{-4}$  M 15-20 min. before irr. 30, 45, 60 kr (1000 r/min).
- (3) Did not protect from death. (185)

## 2-PROPYLTHIAZOLIDINE

Mice, weight 18-22 g

- (2) I.P. 4 mg/kg 10 min. before irr. 725 r.
- (3) On the 30th day after irr. survival 71%; in controls--1%. (555)

## 5-PROPOXYTRYPTAMINE

White mice

- (2) I.P. before irr. 700 r.
- (3) Highly toxic, had hardly any effect on the survival of irradiated mice. (156)

## PSILOTSIN

Guinea pigs

- (2) No entry.
- (3) Did not prevent epilation caused by irr. (623a)

## PSILOTSITINE

Guinea pigs

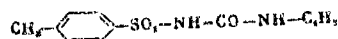
- (2) No entry.
- (3) Did not prevent epilation caused by irr. (623a)

REASSEL'S SOLUTION (cysteine, maleic and succinic acid, glucose, thioacetone, vitamin PP and C)

Piglets

- (2) Intracutaneously 1-2 ml, 3-4 injections with local irr. 1200-1800 r.
- (3) Antiradiation effect absent. (694)

RASTINON; aglicid, strozine, b. amide, diabetol, diabuton, alraetan, dolipol, frezan, glicotron, mobenol, neobellin, orabet, oralin, tolbutamide, N-(4-methyl-benzol-sulfanyl)-N-butyl-urea

White mice, male, weight 18-20 g

- (2) Internally 0.005; 0.01 and 0.025 g 15 min., 1 hour, or 24 hours before gamma-irr. Co<sup>60</sup> 700 r.
- (3) With administration of 0.01 g one hour before irr., survival increased 25-75%. (41)

Dogs

- (2) Internally 0.25 g/kg 1 or 2 hours before gamma-irr. Co<sup>60</sup> 300 or 350 r.  
 (3) Protective effect absent. (41)

## RATION RICH IN PROTEINS

Rats

- (2) No entry.  
 (3) Intensification of radiation effect with irr. LD<sub>50</sub>. (514)

## RATION RICH IN CARBOHYDRATES

Rats

- (1) No entry.  
 (3) Weakened radiation effect with irr. LD<sub>50</sub>. (514)

## REDERGAM; ethanesulfonate of dihydroergotoxin

White mice, weight 22-25 g

- (2) I.P. 0.5 ml 5-25 min. before irr. 600 r.  
 (3) Protective effect absent. (198)

## RESERPINE; banazil, rauvorin, rausedil, cerpikon, tenserpin

Bacteria Escher. coli 0111

- (2) 10<sup>-2</sup> and 10<sup>-3</sup> M before irr. 15 and 40 kr.  
 (3) Survival increased. (519)

Mice, CF<sub>1</sub> line

- (2) Internally 10, 15 and 20 mg/kg 24 hours before irr. 600 r.  
 (3) Survival by 30th day after irr. respectively 10, 5, and 2%; all control died. (513)

White mice, weight 18-20 g

- (2) S.C. 2 mg/kg 2, 12, 18, and 24 hours before irr., internally 2 mg/kg 1, 6, 12, and 24 hours before irr. 700 r.  
 (3) With S.C. administration survival respectively 20, 32.5, 34.4, 30; with internal administration--0, 10, 40, and 20%; all controls died. (108)

White mice, weight 17 g

- (2) S.C. 1 mg/kg 4, 8, or 20 hours before irr. 750 r.  
 (3) Survival respectively 10, 30, and 25%; in controls--5%. (154) See also (642b).

## RESERPINE-N-OXIDE

Mice, CF<sub>1</sub> line

- (2) Internally 10, 15, and 20 mg/kg 24 hours before irr. 600 r.
- (3) Survival by 30th day after irr. 25, 10, and 0% respectively; all controls died. (500)

## RIBONUCLEIC ACID

Mice, male, CF<sub>1</sub> line, 10 weeks old

- (2) I.V. or I.P. 30 min., 24 hours before irr., or on the 4th day after irr. 475 r. On the 5th day after irr., mice infected experimentally (I.P.) with streptomycin resistant strain of *Pseudomonas aeruginosa*.
- (3) Decreased mortality in experimental animals. (504)

Mice, line H

- (2) I.P. 0.1-1 mg after gamma-irr. Co<sup>60</sup> 500 r.
- (3) By 20th day after irr., mortality 25%; in controls, 83%. (180)

White mice, male, weight 140-150 g

- (2) I.P. 80 mg in 2 ml during 15 min. of irr. 500 r 500 r.
- (3) Survival 50%; in controls, 18.5%. (628)

Mice

- (2) I.P. 10-20 mg 15-30 min. before irr. 700 r.
- (3) Survival 64%; all controls died. (443)

## RIBONUCLEIC ACID (oligonucleotide-5.7%, mononucleotide-87.3%)

White rats, male, weight 140-150 g

- (2) I.P. during 15 minutes of irr. 500 r.
- (3) Survival 50%; in controls, 18.5%. (628)

## SODIUM SALT OF RIBONUCLEIC ACID

Mice, female, strain H

- (2) I.V., I.P. 0.3 mg immediately after gamma-irr. Co<sup>60</sup> 1000 r (38-46 r/min).
- (3) Mortality in 5.5, 7.5, and 10 days after irr. respectively 75, 91.7, 100%; all controls died in 5.5 days. (179)

Rats

- (2) I.P. 100 mg 15 min. before, or after irr. 500 r.
- (3) With administration before irr., survival 36.7%; with administration after irradiation, survival 48.5%; in controls, 18.5%. (627)

White rats, male, weight 140-150 g

- (2) I.P. 100 mg in 2 ml during 15 min. of irr. 450, 500, 550 r.; or 100 mg 15 min. before irr. 500 r.
- (3) Survival corresponding to doses of irr. 80, 46.5, and 0.1%; in controls 31, 18.5, and 0%; with administration before irr. --36.7%, in controls, 18.5%. (628)

Rats

- (2) I.P. 30 mg/kg after irr. 700 r.
- (3) Antiradiation effect not detected. (180)

RIBONUCLEIC ACID; polynucleotide

Bacteria Escherichia coli

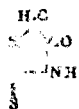
- (2) Isolated from the same strain of E. coli and added to culture medium after irr.
- (3) Promoted post-radiation recovery if amino acids are present at the same time. Effectiveness many times greater than in yeast or tissue extracts. (749)

RIBONUCLEIC ACID; alkaline hydrolysate

No entry

- (2) No entry.
- (3) (626).

RHODANINE



Mice

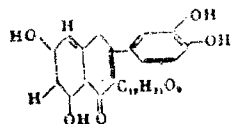
- (2) I.P. 500 mg/kg before irr. 800 r.
- (3) Antiradiation effect absent. (451)

RHODANIC ACID

Paramecium cauratum

- (2) In subtoxic concentration with irr. 10,000 r (460 r/ml).
- (3) Protected against inhibition of division. (143)

RUTIN; birutan, idorutin, melin, marticolorin, oxeritin, ricolmelin, rutsetin, rutabion, ruvit, sclerutin, violakvertetrin



Mice, Swiss line, 7-8 weeks old

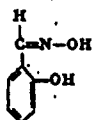
- (2) In food, 3 mg during 2 weeks before irr; 3 mg daily after irr. 705 r.
- (3) Protective effect absent. (451)

Mice, male, Webster line, weight 11-14 g

- (2) Kept on special ration to which 2 or 4% rutin added during 6 weeks before irr., during irr., and 135 days after fractional irr. (200 r per week during 6 weeks).
- (3) Average length of life respectively  $87.6 \pm 7.4$  days, and  $101.9 \pm 7.1$  days; in controls,  $66.6 \pm 8.2$  days. (463)

White mice

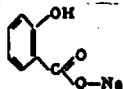
- (2) I.P. 5 or 10 ml daily, up to total dose of 50 ml, with gamma-irr. 600 r.
- (3) In the group receiving 5 ml daily length of life 24 days; in controls, 9 days; survival increased 38%; with 10 ml per day the preparation was toxic and had very weak protective effect. (401)

SALICYLALDOXIMEParamecium caudatum

- (2) In subtoxic concentration with irr. 10,000 r (460 r/min).
- (3) Did not protect against inhibition of division tempo. (143)

Mice

- (2) No entry.
- (3) (617).

SODIUM SALICYLATE; nadizalGuinea pigs, male

- (2) S.C. 30 mg/kg 10 min. before irr. with lethal dose.
- (3) Survival of experimental animals increased. (423a)

SAMARIUM, oxides and nitratesRats

- (2) I.P. 400 mg/kg before gamma-irr.  $\text{Co}^{60}$  800 r.
- (3) Protective effect absent. (646)

SACCHAROSEPhage T 2

- (2) 1% solution with irr. 15,000-300,000 r (60,000 r/min).
- (3) Protective effect absent. (608)

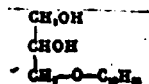
Rats, weight 115-160 g

- (2) I.P. 1 ml/100 g 5% solution during 30 days after irr. 600 r.
- (3) Protective effect absent. Criteria: body weight, erythrocyte and leukocyte content of peripheral blood. (544)

Rabbits, immunized with Breslau rod bacteria

- (2) I.V. 2-3 g 10 min. before irr. of both eyes. (1000 r.)
- (3) Permeability of hemato-ophthalmological barrier the same as in controls. (144)

## SELACHYL ALCOHOL; oleic alpha-ether of glycerine

Rats

- (2) S.C. after irr. 100, 250, and 400 r.
- (3) Damage to bone marrow was the same in experimental and control animals. (379)

Rats

- (2) 1 mg, once daily, after irr. 800 r.
- (3) Decreased mortality 1.5 times. (280)

Rabbits

- (2) 1 mg, once daily, after irr. (T.N.--dose of irr. illegible).
- (3) All animals survived; mortality in controls, 30%. (280)  
See also (12).

## SPLEEN

Rabbits

- (2) 24 hours after irr. 1100 r free, homoplastic spleen transplantation from a healthy rabbit of the same weight as the recipient made into subcutaneous tissue.
- (3) 16 rabbits survived out of 21; 3 out of 18 controls. (140)  
See also (51).

Guinea pigs

- (2) Acellular extract of spleen administered after gamma-irr.  $\text{Co}^{60}$  650 r.
- (3) Weight of experimental animals was larger than in controls. Length of life the same. (459a)

Guinea pigs and rats

- (2) I.P. 5 mg lysophylic preparation biospleen (from beef spleen) after irr. 800 r.
- (3) By 30th day after irr. all experimental and control animals had died. (715)

Dogs

- (2) Spleen transplant or homogenate combined with bone marrow 24 hours after gamma-irr. Co<sup>60</sup> 1000 r.
- (3) One dog survived out of 6 experimental animals; all controls died by 8th day after irr. (548) See also (70b, 312b).

## HETEROLOGOUS SPLEEN, CELLULAR SUSPENSION

Mice

- (2) I.P.  $1.8 \times 10^6$  -  $2 \times 10^6$  cells in 0.6 ml (spleen cells suspension from 5-6 rats, 5-6 days old) 1.5 - 2 hours, or 1-2 days after gamma-irr. Co<sup>60</sup> 700 and 900 r.
- (3) With administration 1.5-2 hours after irr., survival 28%; with administration 1-2 days after irr., 37 and 20%; all controls died. (200)

## ISOLOGOUS SPLEEN, CELLULAR SUSPENSION

Mice, CBA line, male, weight 20 g

- (2) I.V.  $40 \times 10^6$  of normal cells of isologous spleen 4 hours after irr. 900 r.
- (3) On the 180th day after irr., survival 60%; in controls, 0%. (719)

## SPLEEN HOMOGENATE

Mice, male, strain H

- (2) I.P. homogenate of 2 spleens immediately after gamma-irr. Co<sup>60</sup> 1000 r (38-46 r/min)
- (3) By 7.5 days all experimental and control animals had died. (179)

Rats, male and female, weight 140-200 g

- (2) I.P. 1 ml 2-3 hours after irr. 500 r.
- (3) Thromboplastic blood activity higher in experimental animals than in controls. (249)

## SPLEEN EXTRACT

Guinea pigs

- (2) I.M. 30 min., 2 hours, and daily, during 5 days after irr. 650 r.
- (3) Survival 60%; in controls, 25%. (460)

## SODIUM SELENATE

Rats

- (2) I.P. 4.3-4.6 mg/kg and 0.8 of the same dose S.C.; or I.P. 5 mg/kg and 0.8 of this dose S.C. 55-60 min. after irr. 800 r.
- (3) Pronounced protective effect in the first group only. (533) (See also (533a))



**SERINE**Erythrocytes

- (2)  $3 \times 10^{-3}$  M before irr.
- (3) Weak protection against hemolysis. (469)

Mice, male, strain H

- (2) I.P. 5 mg immediately before gamma-irr.  $\text{Co}^{60}$  1000 r (38-46 r/min).
- (3) At 7.5 days after irr. mortality 83.3%; all controls died by that time. (179)

**MAGNESIUM SULFATE**Bacteria Escherichia coli B

- (2)  $4 \times 10^{-3}$  M immediately after irr. 16,000 r with 30-90 min. incubation at 37°C.
- (3) Did not decrease DNA breakdown. (585)

Bacteria Escherichia freundii

- (2) 0.03 M immediately after irr. 54,000 r (18,000 r/min) with subsequent 30-120 min. incubation at 37°C.
- (3) Decreased DNA breakdown from 76.4% to 69.1%. (683)

White mice, male and female, weight 15-22 g

- (2) S.C. 0.35, 0.70, 1.05 mg/kg 15 min. before irr. 480-640 r.
- (3) Survival by 30th day after irr. respectively 22.5, 45, 71.7; in control groups, survival respectively 50, 30, and 41%. (244)

Pregnant rats

- (2) 40 mg/kg before irr. 200 r on the 15th day of pregnancy.
- (3) The number of intrauterine deaths was approximately the same in experimental and control animals. (135) See also (135a).

Mice

- (2) No entry.
- (3) (245).

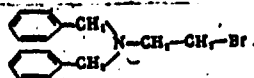
White rats, weight 130-220 g

- (2) S.C. 1 ml 10% solution once before irr., 5 times before irr.; once after irr., or 5 times after irr. 1000 r.
- (3) Average length of life with injections before irr. 14.3 and 15 days respectively, in controls, 12.3 days. With administration after irr. protective effect absent. (195)

Pregnant rabbits

- (2) I.M. 3 ml 25% solution 5 min. after irr. 800 r.
- (3) Number of intrauterine deaths was smaller than in controls. (135)

## SYMPATHOLYTIN; n,n-dibenzyl-beta-bromethylamine

Rabbits, weight 2200-2800 g

- (2) On alternate days during a week before irr. 600 r.
- (3) Mortality 22.7%; in controls, 20%. Ulcers developed around the eyes and ears in experimental animals. (320)

## SINIGRIN

Mice

- (2) Internally 5-6 g/kg 1-1.5 hours before irr. 600 r (124 r/min).
- (3) Survival increased to 31.5%. (43)

Dogs

- (2) Internally 0.6-0.8 g/kg 1 hour before gamma-irr. Co<sup>60</sup> 350 r (350 r/min).
- (3) 3 animals survived out of 10; all controls died. (43)

## SYNKAVIT; kappadion, tilokai

Bacteria Escherichia coli B/r

- (2) Cultivation in presence of 0.02%, or 3 hour incubation with constant aeration until irr. with various doses (2000 rad/min) in anoxic, or well aerated conditions.
- (3) Did not affect survival. (543)

Erlich carcinoma

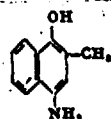
- (2) 5 mg/kg immediately before irr. 600-1200 r.
- (3) Intensification of damaging effect of roentgen rays. (827)

Rats

- (2) 10 mg 30 min. before irr. 150 r.
- (3) Radiation resistance of lymphocytes did not change. (226)

Rats with Walker 256 carcinoma

- (2) I.V. 30 min. before irr. of carcinoma, 1100 r (158 r/min).
- (3) Intensified the damaging effect of roentgen rays on tumor. (650a)

SINKAMIN; 4-amino-2-methyl-1-naphthol-hydrochloride, Vitamin K<sub>5</sub>, kaivazin

Bacteria Escherichia coli,  
Micrococcus radiourans,  
Pseudomonas fragi,  
Yeasts Torulopsis rosae

- (2) Various concentrations 25 min. before and during, or 3 hours after gamma-irr.  $\text{Co}^{60}$  (3000 rad/min) in air, or in  $\text{N}_2$ .
- (3) With action during and before irr. sensitized bacteria in anaerobic conditions and yeasts in aerobic conditions of irr. (462)

SYNESTROL; hexaestrol, hormonoestrol, mexohexostrol, novostrol, syntex, folliplex, estren, sestronal

White mice, and rats, male and female

- (2) S.C. in butyric solution 0.1-10 mg once, or twice, 5-10 days before, and 1 hour after gamma-irr.  $\text{Co}^{60}$  650-700 r for mice, and 700-750 r for rats.
- (3) Protective effect absent. (94)

Mice

- (2) Administered once, or repeatedly before irr. 600 r.
- (3) Single administration increased survival up to 30%; multiple--does not affect survival. (223)

Beta-SITOSTERIN

No entry

- (2) No entry.
- (3) (21).

CALCIUM SALTS

Thymocytes of white rats

- (2) 0.005-0.02 molar solutions of gluconate, glucuronate, nitrate and chloride added 10 min. after irr. in vitro with doses up to 10 kr in Krebs-Ringer medium containing  $1.2 \times 10^{-5}$  M  $\text{CaCl}_2$  and  $1.1 \times 10^{-5}$  M  $\text{MgSO}_4$ .
- (3) 0.01 Ca salts increased survival: with 70 r from 34% to 74%, and with 4000 r from 0% to 33%. With 10,000 r, postradiation protection absent. (665)

MAGNESIUM SALTS

Thymocytes of white rats

- (2) 0.02 molar solution of sulfate, or chloride added 10 min. before irr. in vitro with doses up to 4000 r in a medium containing  $1.2 \times 10^{-5}$  M  $\text{CaCl}_2$  and  $1.1 \times 10^{-5}$  M  $\text{MgSO}_4$ .
- (3) Increased survival: with dose 100 r from 25% to 50%. With 2000 r postradiation protection absent. (665)

SOMATOTROPIC HORMONE; STH, STG

White rats, male, weight 170-200 g

- (2) S.C. 1 mg per injection during 10 days before irr.; daily

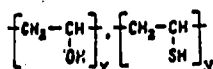
twice a day, or during 6-7 days, starting from the 1st day after gamma-irr. 750 r (417-431 r/min). In one series of experiments, administration of STH after irr. in conjunction with peroral administration of biomydin, 3 mg per animal twice a day during 10 days after irr.

- (3) Administration of preparation with prophylactic aim not effective. Therapeutic administration of STH alone, or in conjunction with biomydin increased survival of experimental animals 34 and 25% in comparison with controls. (94)

#### Rats

- (2) Before irr. 700 r.  
(3) Increased average length of life of experimental animals. (223) See also (145).

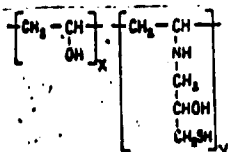
#### SOPOLYMER OF VINYL ALCOHOL AND VINYL MERCAPTAN



White rats, weight 160-180 g

- (2) I.P. 150-200 mg/kg 1.5-3 hours before irr. 700 r. Experimented with 3 models containing 6.15, 4.1, and 4.7 M % SH-group respectively. Molecular weight of first model--40,000, the second and third--10,000.  
(3) Protective effect absent. (65)

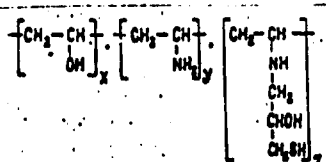
#### SOPOLYMER OF VINYL ALCOHOL WITH N-VINYL-2-OXY-3-MERCAPTOAMINE



White rats, weight 160-180 g

- (2) I.P. 150-300 mg/kg 1.5-3 hours before irr. 700 r. Experimented with 3 models containing 2.8, 4.4, and 47 M % SH-group respectively. Molecular weights: 6500, 6800, and 9000.  
(3) Protective effect absent. (66)

#### SOPOLYMER OF VINYL ALCOHOL, VINYL-AMINE-WITH N-VINYL-2-OXY-3-MERCAPTOAMINE



White rats, weight 200-220 g

- (2) I.V. 5 mg/kg 15-30 min. before irr. 800 r. Model contained 36.5 M % SH-group. Molecular weight--15,000.
- (3) Survival higher than in controls. (65)

## BROCCOLI

Guinea pigs, male, weight 250-300 g

- (2) Fed during two weeks before irr. 400 r. 50 r per day.
- (3) Decreased the activity of spleen ATP-ase and 5-nucleotidase. (523)

## SPLENIN (preparation from spleen)

Mice, rats

- (2) No entry.
- (3) (223).

## ONONIS ARVENSIS

White rats, male, weight 150-170 g

- (2) As decoction, added to rat food (calculated 5 ml per 6 animals). Fed during 30 days after irr. 700 r.
- (3) By 20th day after irr., survival 38.9%; in controls, 66.7%. (351) See also (351a).

## STELLIN ASCORBINATE (protein from cell nuclei of fish sperm)

Rats

- (2) 150 mg/kg before gamma-irr. Co<sup>60</sup> 700 r.
- (3) Survival 20%; all controls died. (267)

## STELLIN SULFATE

Rats

- (2) 150 mg/kg before gamma-irr. Co<sup>60</sup> 700 r.
- (3) Survival 43%; all controls died. (267)

## STELLIN HYDROCHLORIDE

Rats

- (2) 100 mg/kg before gamma-irr. Co<sup>60</sup> 700 r.
- (3) Survival 30%; all controls died. (207)

STREPTOMYCIN; sterogenol, 1,3-diguanidino-2,4,5,6-tetrahydroxycyclohexane- $\alpha$ -2'-(n-methyl-2-glucoseaminozido)-streptozide-4'

Onion rootlets

- (2)  $5 \times 10^{-3}$  gamma/ml 1-2 hours before gamma-irr. 250 r; or 2, 4, 9, 12 and 16 hours after gamma-irr. 250 r, or 30 rad with neutrons.

- (3) Administration before irr. protected against chromosome changes. After irr. with gamma-rays, protected if administered in the early interphase, 2 and 4 hours after irr., (effect of protection around 48%) and intensified injury if administered in later periods (late interphase). Irr. with neutrons; protection only if administered 2 hours after irr. (71)

#### Mice

- (2) I.M. 5.0 mg before irr. 700 r.  
(3) Survival in experimental group higher than in controls. (547)

#### White mice

- (2) Administered during first 20 days after irr. 4 mg; 3-5 min. before irr.; tourniquet was applied on the lower third of hip, and removed immediately after irr. 700 r.  
(3) Survival in experimental groups 77-80%; with administration of streptomycin only, without tourniquet: 5-13%; with application of tourniquet alone, 15-40%; in controls, 0%. (109)

#### White mice, male and female, weight 18-22 g

- (2) S.C. 2-5 mg/mouse 5 min. before gamma-irr.; S.C. 2 mg/mouse 24, 48, and 72 hours after gamma-irr. 1050-1100 r.  
(3) With administration before irr., by 30th day after irr. 1 mouse survived out of 121 experimental mice; out of 140 controls--0. With administration after irr., protective effect absent also. (291)

#### Mice, female, strain H

- (2) S.C. 500 units immediately after gamma-irr. 1000 r  $\text{Co}^{60}$  (38-46 r/min).  
(3) Antiradiation effect absent. (179)

#### White mice

- (2) 0.8 mg per injection, twice. Irr. 500 r.  
(3) Mortality in experimental group, 13%; in controls, 73%. (190)

### STREPTOMYCIN SULFATE

#### Paramecium aurelia

- (2) 3 mg/ml in culture medium 4 hours after irr. 1-7 kr. in 20%  $\text{O}_2$  + 80%  $\text{He}$ , or in  $\text{N}_2$ ; or 10 min. before irr. with alpha-particles  $\text{Pu}^{239}$  ( $3 \times 10^5$  alpha-particles/sec), in air.  
(3) Decreased the frequency of recessive lethal mutations resulting from roentgen or alpha-irr. (in the presence or absence of  $\text{O}_2$ ). (565)

### STRYCHNINE

#### Tadpoles of Rana esculenta

- (2) 1 : 30,000 - 1 : 100,000 during irr. 27,500 r (1100 r/min).

- (3) Concentration 1 : 100,000 intensified effect of irr. Average length of life decreased from 7 days to 4. Concentrations 1 : 30,000 and 1 : 500,000 protected. (703)

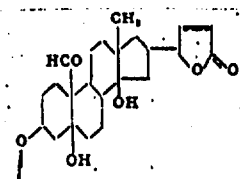
Mice, male, strain H

- (2) 0.05 immediately before gamma-irr.  $\text{Co}^{60}$  1000 r (38-46 r/min).  
 (3) At 5.5, 7.5, and 10 days after irr. mortality respectively 66.7, 83, 100%; all controls died within 5.5 days after irr. (179)

Rats

- (2) 0.15 ml 0.1% solution during 9 days after irr. 600 r.  
 (3) Anemia more pronounced in experimental rats than in controls. (323)

STROPHANTIN



(cymarose + glucose)

White mice, weight 17-20 g

- (2) S.C. doses: 1, 2, 3, 7, and 10 gamma/g at various times after irr. 300 and 800 r.  
 (3) Sensitivity to strophanthin increased in the irradiated animals. (168)

SUCCINYLSULFATHIAZOLE; sulfasuxidine

Dogs

- (2) 8 g per day, during 3 days before, and 6 weeks after irr. of isolated segment of ileum 4000 r.  
 (3) Less expressed edema of the injured portion of intestine. (748)

CORROSIVE SUBLIMATE; mercuric chloride



Mice, female, strain H

- (2) I.P. 0.01 mg immediately after gamma-irr.  $\text{Co}^{60}$  1000 r (38-46 r/min).  
 (3) Within 10 days after irr. all experimental and control animals died. (179)

SULFANYLGUANIDINE



Mice, male, Swiss line, weight 21 g

- (2) I.P. 8 mg/mouse 5-10 min. before irr. 900 r.  
 (3) Survival 19%; in controls, 2%. (753)

## SULFANYLTHIOUREA



Mice, male, Swiss line, weight 21 g

(2) I.P. 100 mg/mouse 5-10 min. before irr. 900 r.

(3) Survival 45%; in controls, 2%. (753)

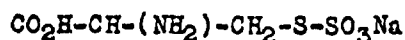
## SULFOPHENYL-1(1-AZO-5')-3,5,3'-TRIIODOTHYRONINE

Black mice, female, C<sub>57</sub>, weight 20-25 g

(2) 3 mg/25 g before irr. 700 r (85 r/min); for controls--0.9% solution of NaCl.

(3) Survival of control animals 13%; all experimental animals died. (382)

## SULFOCYSTEINE SODIUM SALT



Mice, male, line CBO, weight 20 g

(2) I.P. 1600 mg/kg 15 min. before irr. 1092 r.

(3) Protective effect absent. (508)

## NON-SPECIFIC SERUM

Mice

(2) S.C. 0.25 - 1 ml 11 days before, or immediately after gamma-irr. 700 r.

(3) Protective effect absent. (159)

## RAT. SERUM (globulin and albumen fractions)

White rats

(2) S.C. 1-2 ml serum solution, calculated 50 mg protein per 100 g weight. Serum administered once; thrice with 7-day intervals; and many times daily (up to 6 injections), 6, 20, and 35 days before general gamma-irr. Co<sup>60</sup> 600 r.

(3) Protective effect absent. (153)

## CALF SERUM

Guinea pigs, weight 500-550 g

(2) S.C. 1 ml 30 min. after irr. 550 r.; before and after irr. 550 r.

(3) Survival in the first case 50%; in the second case: 40%. (483)

## HORSE SERUM

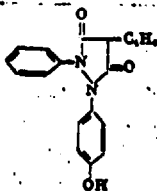
Mice

(2) S.C. 0.25-1 ml 11 days before, or immediately after gamma-irr. Co<sup>60</sup> 700 r.

(3) Increase in survival only when administered before irr. (159)



TANDERIL; G-27202, oxazolidin, oxyphenylbutazone, tandearil,  
1-(p-oxyphenyl)-2-phenyl-4-butyl-3,5-pyrazolidindion



Mice, female

- (2) I.P. daily 1.3 mg, 15 days before, or after irr. 550 r (LD<sub>96/30</sub>).
- (3) With administration after irr. survival of experimental animals increased to 38%; administration before irr. ineffective (no bibliog. annotation).

Guinea pigs

- (2) No entry.
- (3) Epilation caused by roentgen rays the same in experimental and control animals. (623a)

TANNIN

Mice, male, strain H

- (2) I.P. 1 mg immediately before gamma-irr. Co<sup>60</sup> 1000 r (38-46 r/min).
- (3) Within 5.5 days after irr. all experimental and control animals died. (179)

TEZANOV'S EMULSION

Rabbits, male and female, "White Giant"  
weight 1500-1900 g

- (2) Emulsion applied to sectors of treated skin; calculated 0.1 for 1 cm<sup>2</sup> with prophylactic and therapeutic aim. Irr. conducted either with flat applications 4 x 4 cm, containing radioactive phosphorus (P<sup>32</sup>), total dose 6200 r or with roentgen apparatus, total dose 9250 r.
- (3) Prophylactic application had no effect; therapeutic application showed decrease in skin changes. (206)

N-THENYL-beta-MERCAPTOETHYLAMINE

Mice

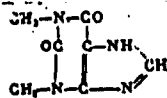
- (2) I.P. in few doses, one a maximum dose, 5-15 min. before irr. with roentgen or gamma-rays Co<sup>60</sup> in absolute lethal doses.
- (3) Survival 30-50%; in controls, 0%. (312)

beta-(THEOBROMINE)-8-alpha-ALANINE

White mice

- (2) I.P. 500 and 1000 mg/kg 10-15 min. before irr. 700 r.
- (3) Protective effect absent. (154)

THEOPHYLLINE; akvalin, gevafillin, labofillin, parkofillin, solozin, tectsin, elixofillin, 1,3-dimethylxanthine



#### Rabbits

- (2) During 7 days after irr. 300 r.
- (3) Increased the numbers of leukocytes and granulocytes in the peripheral blood. (672)

TESTOSTERONE PRIOPIONATE; agovirin, andronat, anertan, virormon, homosteron, malestron, perandren, sterandrill, testoliutin, testoviron

#### White mice, male and female, weight 16-22 g

- (2) S.C. in butyric solution 0.1-10 mg once, or twice, 5-10 days before, and 1 hour after gamma-irr. Co<sup>60</sup> 650 r (LD<sub>50</sub>/30).
- (3) Survival increased 17.5-29%. (94)

#### White rats, male and female, weight 160-200 g

- (2) S.C. in butyric solution 0.1-10 mg, once, or twice, 5-10 days before and one hour after gamma-irr. Co<sup>60</sup> 700 and 750 r.
- (3) Protective effect absent. (94)

#### White rats, male and female, weight 150-200 g

- (2) S.C. 0.5 or 5 mg during 10 days after irr. 1000 r (15 r/hour).
- (3) By 18th day after irr. the mortality of male controls was 50%; of female controls--100%. In the experimental group, male mortality was 60-70% by 18th day. All females from experimental group died within 14-16 days after irr. (648)

#### Rats, castrated males

- (2) I.M. 10 mg 1 hour after local irr. of suprapubic area 1000 r.
- (3) Considerable number of mitoses in the cells of seminal vesicles and signs of epithelial hypofunction present in experimental animals. (488)

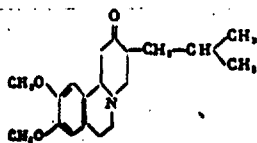
#### Mice, rats

- (2) No entry.
- (3) (223).

#### Rats, female

- (2) I.M. 1.25 during 6 days before irr. 700 r.
- (3) 9 experimental rats died out of 10; all controls died. (630a)

TETRABENAZINE; nitoman, Ro 1-9569, 2-oxo-3-isobutyl-9,10-dimethoxy-1,2,3,4,6,7-hexahydro-11-benzoquinolizine

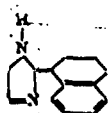


White mice, weight 17 g

(2) S.C. 25 mg/kg 10, 30, 60, or 120 min. before irr. 750 r.

(3) Survival respectively 20, 15, 15, and 0%; in controls, 5%. (454)

TETRAHYDROZOLINE; vizin, tetrizolin, tinarinin, tizin, tizanol, titsin, iuksin, dl-2-[1'-2'-3'-4'-tetrahydronaphthyl-(1')]7-imidazoline

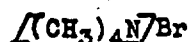


Mice

(2) Before irr. 700 r.

(3) Pronounced antiradiation effect. (358)

TETRAMETHYLAMMONIUM BROMIDE



Paramecium caudatum

(2) In subtoxic concentration with irr. 10,000 r (480 r/min).

(3) Did not protect against inhibition of division. (143)

TETRAMETHYLENE-bis-GUANIDINSULFATE

Mice

(2) I.P. 100, 200 mg/kg before irr. 800 r.

(3) Antiradiation effect absent. (451)

2-TETRAMETHYLENE-3-METHYLTHIAZOLIDINE

Mice, weight 18-22 g

(2) I.P. 5 mg/kg 10 min. before irr. 725 r.

(3) Survival on the 30th day after irr. 48%; in controls, 1%. (555)

TETRAMETHYLENESULFOXIDE



Mice

(2) I.P. 2500 mg/kg 30 min. before irr. 1007 rad ( $LD_{99/30}$ ).

(3) Survival with dose  $LD_{99/30}$  rose to 30%. (369)

## 2,2,4,5-TETRAMETHYLTHIAZOLIDINE

Mice, weight 18-22 g

(2) I.P. 4 mg/kg 10 min. before irr. 725 r.

(3) By 30th day after irr. survival 60%; in controls--1%. (555)

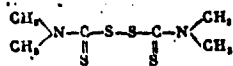
## 2,2,4,4-TETRAMETHYL-5-THIONEIMIDAZOLINE

Mice,  $C_3H$ , 12-18 weeks old

(2) 5 min. before irr. 800 r.

(3) Survival 7-17%; all controls died. (720)

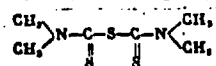
## TETRAMETHYLTHIRAM DISULFIDE; tiram

Mice

(2) I.P. 150 mg/kg before irr. 800 r.

(3) Insignificant increase in survival. (451)

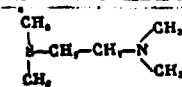
## TETRAMETHYLTHIRAM MONOSULFIDE

Mice

(2) I.P. 100 mg/kg before irr. 800 r.

(3) Out of 10 animals, 8 died; all controls died. (451)

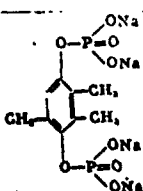
## TETRAMETHYLCYSTEAMINE

Candida tropicans

(2) 0.005-0.04 M during irr. 12,500 rad. beta-rays  $Sr^{90}$ .

(3) With 0.01, and especially with 0.04 M--increase in mortality. (764)

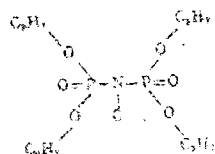
## TETRASODIUM SALT OF 2,3,5-TRIMETHYLHYDROQUINONE DIPHOSPHATE

Rats with Walker 256 carcinoma

(2) I.V. before irr. of carcinoma, 1100 r.

(3) Radiosensitizing action expressed weakly. (650a)

## TETRAPROPYLPYROPHOSPHATE-N; TPPP-N, (TPPP-N)

Mice(2) S.C. 1/4 LD<sub>50</sub> 3 days before irr. 600 and 800 r.

(3) Survival 2% and 10% higher than in controls. (18)

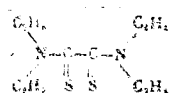
## TETRAPHOSPHONITRILIC ACID

Mice, female

(2) I.P. 1 mm/kg 10 min. before irr. 1025 r.

(3) All experimental and control animals died. (377a)

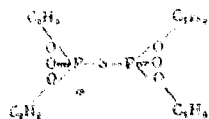
## TETRAETHYLDITHIOXAMIDE

Mice

(2) Before irr. 800 r.

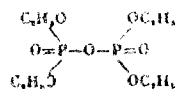
(3) Antiradiation effect absent. (451)

## TETRAETHYLPYROPHOSPHATE-S, TEPF-S, (TEPP-S)

Mice(2) S.C. 1/20 LD<sub>50</sub> 3 and 8 days before irr. 600 r.

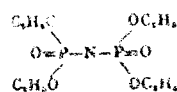
(3) Survival 8 and 15% higher than in controls. (18)

## TETRAETHYLPYROPHOSPHATE, TEPF, (TEPP)

Mice(2) S.C. 1/20 LD<sub>50</sub> 3 days before irr. 600 and 800 r; 8 days before irr. 600 r, and internally 1/10 LD<sub>50</sub> 7 days before irr. 700 r.

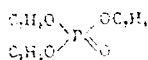
(3) Survival respectively 0, 35, 5, 60 and 25% higher than controls. (18)

## TETRAETHYLPYROPHOSPHATE-N, TEPF-N, (TEPP-N)

Mice(2) S.C. 1/4 LD<sub>50</sub> 3 days before irr. 600 r, and internally 1/10 LD<sub>50</sub> 7 days before irr. 700 r.

(3) Survival 40 and 45% higher than in controls. (18)

1/2 TETRAETHYLPYROPHOSPHATE, 1/2 TEPP, (1/2 TEPP)

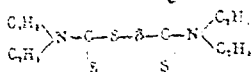


Mice

(2) S.C. 1/4 LD<sub>50</sub> 3 and 3 days before irr. 600 r.

(3) Survival 10 and 30% higher than in controls. (18)

TETRAETHYLTHIRAM DISULFIDE; antebuse, abstenzil, abstinil, alkofofin, antadix, antithyl, antiethan, antikol, antiethanol, averren, bonibal, dicetil, disulfiram, kontralin, contrapot, kronetal, noksal, refusal, stopentyl, tetradin, tetraethyl, tiram, tiuranid, teturam, bis-(diethylthiocarbamyl)-disulfide

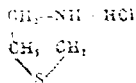


Mice

(2) I.P. 100-750 mg/kg before irr. 600 r.

(3) Protective effect absent. (461)

THIAZOLIDINE HYDROCHLORIDE



Yeasts Saccharomyces vini, Megri strain 139 B

(2) 10<sup>-2</sup> M 15-20 min. before irr. 30, 45, 60 kr (1000 r/min).

(3) Did not protect against death. (185)

THIAZOLIDINE -4-CARBOXYLIC ACID

Rats, male, weight 300 g

(2) I.P. 15 mg/100g 17 min. before irr. 1000 r.

(3) 1 animal died out of 12 by 120th day after irr.; in controls, within the same period of time, 7 rats died. (798)

Rats, male, weight 300 g

(2) I.P. 10 min. after irr. 1000 r.

(3) Protective effect absent. (798)

Rats, male, weight 300 g

(2) Internally 50 mg/100 g 28-32 min. before irr. 1000 r.

(3) Protective effect absent. (798)

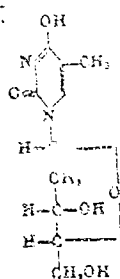
1-TIA-4,6,8-TRIAZASPYRO-(4,4')-NONANDIHYDROBROMIDE

No entry

(2) No entry.

(3) (776).

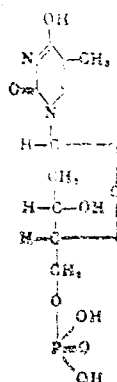
## THYMIDINE

Mice

(2) After irr. 500 r.

(3) Accelerated regeneration of blood-forming system. Number of mitoses in bone marrow on the 4-7 day after irr. was 20-50% higher than in controls; by 10th day this difference ceased. (559)

## THYMIDINIC ACID; thymidinphosphoric acid

Mice

(2) 2 mg after general irr. 500 r.

(3) Accelerated regeneration of blood-forming system. Number of mitoses in bone marrow on the 4-7 day after irr. was 20-50% higher than in controls; by 10th day this difference ceased. (559)

## TINUVIN P; alkylated 2-oxyphenylbenzotriazole

White mice, female, 6-8 weeks old

(2) 1 mg/kg before irr. 600 r.

(3) By 18th day after irr. 5 mice died out of 12, and in controls 7 out of 12. (572)

Mice, male, CF<sub>1</sub> line, weight 20-25 g

(2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).

(3) By 16th day after irr. all experimental animals died. (501a)

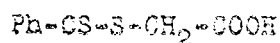
## THIOAMMELINE

Mice

(2) I.P. 50, 100 mg/kg before irr. 800 r.

- (3) Antiradiation effect absent. (451)

# THIOBENZOXLAHIOACETIC ACID



Mice, male, Swiss line, weight 21 g

- (2) I.P. 3.5 mg/mouse 5-10 min. before irr. 900 r.

- (3) Survival 9%; in controls--2%. (753)

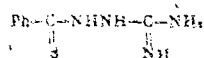
# 2,2'-THIO-bis-(4,6-DICHLORPHENOL)

Mice

- (2) I.P. 20-100 mg/kg before irr. 800 r.

- (3) Antiradiation effect absent. (451)

# THIOBENZAMIDGUANIDINE



Mice, male, Swiss line, weight 21 g

- (2) I.P. 5 mg/mouse 5-10 min. before irr. 900 r.

- (3) Protective effect absent. (753)

# THIOBENZOIC ACID



Mice, male, Swiss line, weight 21 g

- (2) I.P. 7 mg/mouse 5-10 min. before irr. 900 r.

- (3) Survival 15%; in controls--2%. (753)

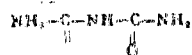
# 4,4'-THIO-bis-(6-TERTBUTYL-M-CREZOL)

Mice

- (2) I.P. 25, 50 mg/kg before irr. 800 r.

- (3) Antiradiation effect absent. (451)

# THIOBIURET



Mice, male, Swiss line, weight 21 g

- (2) I.P. 5 mg/mouse 5-10 min. before irr. 900 r.

- (3) Survival 9%; in controls--2%. (753)

# L-THIOHISTIDINE

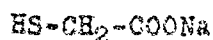
Mice

- (2) I.P. 500, 1000 mg/kg before irr. 800 r.

- (3) Antiradiation effect absent. (451)



## SODIUM THIOLACTATE

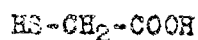
Rabbits

- (2) I.V. 0.25-0.5 g/animal before irr. of eyes 1400 r.  
 (3) Antiradiation effect absent. (799)

Human and pig erythrocytes

- (2)  $3 \times 10^{-3}$  -  $3 \times 10^{-4}$  M in neutral solution before, or after irr. 1100 r/min.  
 (3) Protected against hemolysis. (471)

## THIOGLYCOLIC ACID

Phase T 2

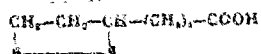
- (2) 1% with irr. 15,000-300,000 r. (60,000 r/min), in the presence or absence of  $\text{O}_2$ .  
 (3) Protection without  $\text{O}_2$  somewhat better than when  $\text{O}_2$  present. Survival with 300,000 r. rose from 0.001 to 2.5%. (608)

## ANILID OF THIOGLYCOLIC ACID

No entry

- (2) No entry.  
 (3) (182, 609a).

## alpha-THIOCTIC ACID; alpha-lypoic acid

Mice and rats

- (2) 0.5-1.0 ml before irr.  
 (3) Mortality in experimental groups considerably smaller than in controls. (684)

Mice

- (2) No entry.  
 (3) (583).

Rats with Yoker transplanted carcinoma

- (2) Before or after fractional irr. (total dose 3000 r).  
 (3) With administration after irr. protective action. (13)

## THIOCTIC ACID, SODIUM SALT

White rats

- (2) I.P. before irr.  
 (3) Antiradiation effect observed. (580)

## THIOLACTONIC ACID

Mice

- (2) No entry.
- (3) (223).

## THIOHALPIC ACID

Mice

- (2) No entry.
- (3) (451).

3,6-bis- $\gamma$ -(4-THIOMORPHOLYNYL)-ETHYLPIPERAZINE-2,5-DION<sup>7</sup>Mice

- (2) I.P. 500 mg/kg before irr. 800 r.
- (3) Antiradiation effect absent. (451)

## THIOUREA

Rootlets of onion "Batun"

- (2) 0.005 M before irr. 75 r.
- (3) The number of cells with chromosome changes decreased 37.73%. (295)

Candida tropicalis

- (2) 0.005-0.04 M during gamma-irr. 12.5 krad. beta-rays Sr<sup>90</sup>.
- (3) With concentration 0.005 M survival increased 13.5%. (800)

Yeasts Saccharomyces vini

- (2)  $10^{-4}$  -  $10^{-7}$  M per 1 ml during gamma-irr. Co<sup>60</sup> 5000-100,000 r.
- (3) Delayed death of dividing cells. (48)

Candida Berkhout

- (2) 0.02 M in culture medium 40 hours before irr. with roentgen and beta-rays.
- (3) Protected from death with DRF=2 for roentgen irr. and with DRF=1.3 for beta-irr. Protected against formation of pseudomycelium. (801)

Bacteria Pseudomonas sp.

- (2) 0.03-0.5 M solution 3 min. before irr. in N<sub>2</sub>.
- (3) Protected against death. With concentration 0.3-0.5 M DRF=2,7; lesser concentrations protected less. (402)

Rat erythrocytes

- (2)  $1.25 \times 10^{-3}$  -  $2.5 \times 10^{-2}$  M in physiological solution before gamma-irr. Co<sup>60</sup> 40 kr (400 r/min).

- (3) Protected against hemolysis with concentrations  $3.75 \times 10^{-3}$  M and higher, (hemolysis instead of 33%--13.5%) and intensified hemolysis with smaller concentrations (up to 46.5%). (157)

Cells of Erlich ascites carcinoma

- (2) 0.01 M in Hank's solution containing 1.5% glycerine, 5-7 min. before irr. in vitro, dose 4 kr at 20 and -78.4°C.
- (3) Effective protection against death only at 20°C. (452)

Erlich ascites carcinoma

- (2) with irr. in vitro 20 kr, or I.P. with local irr. in vivo 5000 r.
- (3) Protected in experiments in vivo; (criterion: tumor weight). Did not protect in vitro; criterion: tumor transplantability. (573)

Crocker sarcoma

- (2) I.P. with local irr. in vivo 5000 r.
- (3) Did not protect; criterion: tumor weight. (573)

Mice, strain H

- (2) I.P. 40 mg immediately before gamma-irr.  $\text{Co}^{60}$  500 r (50 r/min).
- (3) Mortality: 25%; in controls, 83.3%. (182)

Mice

- (2) I.P. 50, 100 mg/kg before irr. 800 r.
- (3) Antiradiation effect absent. (451)

Rats

- (2) 1.5 g/kg 10 min. before, or 1.5-2 hours after gamma-irr.  $\text{Co}^{60}$  800 r.
- (3) Survival 16.6% with administration before irr. All controls died. Administration of preparation after irr. not effective. (201)

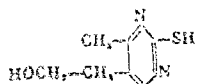
Rats

- (2) 600 mg/kg 20 min. before gamma-irr.  $\text{Co}^{60}$  800 r.
- (3) Frequency dependent osmotic resistance curve of liver tissue approached the norm. (193)

Rabbits

- (2) I.P. 2 g immediately after irr. of right eye and 5 min. before irr. of the left eye, dose 1500 r.
- (3) Cataracts did not develop in 3 rabbits out of 11. (119) See also (386a).

## 2-THIO-5-(beta-OXYETHYL)-6-METHYLRACIL

White mice

(2) I.P. 500, 750, and 1000 mg/kg 10-15 min. before irr. 700 r.

(3) Protective effect absent. (154)

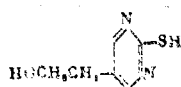
THIOPENTAL; pentothal, 5-ethyl-5-(1'-methyl-butyl)-2-thiobarbituric acid

Rabbits

(2) No entry.

(3) (450).

## 2-THIO-5-(beta-OXYETHYL)-URACIL

White mice

(2) I.P. 500 and 100 mg/kg 10-15 min. before irr. 700 r.

(3) Protective effect absent. (154)

## 1-THIOSORBITOL

Mice

(2) No entry.

(3) (451).

## SODIUM THIOSULFATE

Cells of Erlich ascites carcinoma

(2) 0.004 M in Hank's solution containing 1.5% glycerine, 5-7 min. before irr. at 20° and -78.4°C.

(3) Substantial protection only at 20°C. (452)

Mice

(2) No entry.

(3) Insignificant protective effect. (515)

## THIOTAURINE

Mice, male, Swiss line, weight 20 g

(2) I.P. 1.76 g/kg 15 min. before irr. 600 r.

(3) Protective effect absent. (412) See also (411).

## THIOURACIL

Rats

(2) 0.03 g before irr. 1000 r.

(3) Lightened the course of radiation sickness; increased survival. (187a) See also (501b).

## THIOPHEN

Mice

- (2) I.P. 50, 100 mg/kg before irr. 800 r.
- (3) Protective effect absent. (451)

## THIOPHENATINE

Rabbits, weight 1700-2500 g

- (2) S.C. 2 mg/kg 1 day, and 30 min. before gamma-irr. Co<sup>60</sup> 800 r, and during 20 days after gamma-irr., twice a day.
- (3) Protective effect absent. (16)

## PYRAMINE; p-oxyphenylethylamine

Mice

- (2) I.P. 75 mg/kg 5 min. before irr. 600 r.
- (3) Average length of life of experimental animals was higher than in controls. (454a)

## THYREOIDINE

Rats, weight 260-300 g

- (2) Internally 5 mg two times a day for 30 days, starting with the 90th day after gamma-irr. Co<sup>60</sup> 850 r.
- (3) Survival doubled. (15)

Rats

- (2) Internally 10-25 mg twice a day, daily, during 2-4 months after irr. 750-850 r.
- (3) Resets andishment of resistance to gas gangrene agent. (166)

## TYROSINE

Erythrocytes

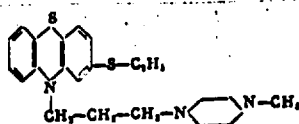
- (2)  $3 \times 10^{-4}$  M before irr.
- (3) Protected against hemolysis. (469)

## Na-d-THYROXINE

Black mice, female, C57, weight 20-25 g

- (2) 3 mg/25 g before irr.; 30 mg/25 g daily during 12 days before irr.; 30 mg/25 g during 6 days after irr. 700 r. 0.9% NaCl solution administered to controls.
- (3) Antiradiation, or radiosensitization effect absent. (382)

<sup>H</sup>  
TIOETHYLPERAZINE; torekan, 3-ethylmercapto-10- $\sqrt{3}$ '-1'-methyl-4' -  
piperazinyl)-propyl/-phenothiazine



White mice, weight 17 g

- (2) I.P. or S.C. 10 mg/kg 5, or 70 min. before irr.; I.P. 10 mg/kg 5 min. after irr. 900 r.
- (3) Survival corresponding to time and mode of administration 10, 0, 0, 0, and 0%; all controls died. (454)

m-TOLYLTHIOURACIL

Mice

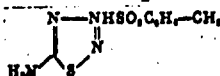
- (2) Before irr. 800 r.
- (3) Some increase in survival. (776)

3,4-TOLUOLDITHIOL

Mice

- (2) I.P. before irr. 9 800 r.
- (3) High antiradiation effect observed. (451)

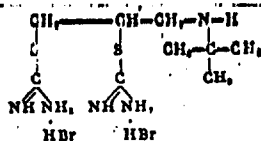
3-TOLUOL-p-SULFONAMIDE-5-AMINO-1,2,4-THIAZOLE



Mice, male, Swiss line, weight 21 g

- (2) I.P. 12 mg/mouse 5-10 min. before irr. 900 r.
- (3) Survival 4%; in controls, 2%. (753)

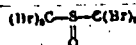
TERTIARY BUTYL-2,3-DI-(ISOTHIURONIUMBROMIDE)-PROPYLAMINE



White mice

- (2) I.P. 25 and 37.5 mg/kg 10-15 min. before irr. 700 r.
- (3) Survival 30 and 10%; in controls, 0%. (343)

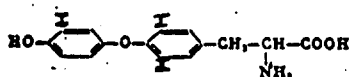
bis-TRIBROMMETHYL-SULFOXIDE



Mice R

(2) I.P. 25 mg/kg in ethylpalmitate 30 min. before irr. 1007 rad ( $LD_{99/30}$ ).

(3) With dose  $LD_{99/30}$  20% survival. (389)

3,5,3'-TRIIOD-1-THYRONINEBlack mice, female, C57, weight 20-25 g

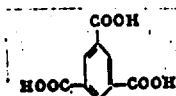
(2) 3 mg/25 g before irr.; 30 mg/25 g daily during 12 days before irr.; 30 mg/25 g during 6 days after irr. 700 r. 0.9% solution of NaCl administered to controls.

(3) Length of life of experimental animals was shorter than in controls. (382)

alpha-TRIIODOTHYRONINERats, male, weight 350-400 g

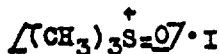
(2) Internally with drinking water 25 gamma daily, starting from 8th week after irr. of right hind leg. 3000 r.

(3) 20 weeks after irr. pronounced thickening of the skin and subcutaneous tissue in the irradiated leg of control rats; amorphous collagen content increased in subcutaneous tissue; hair follicles and sebaceous glands decreased. These changes were considerably less pronounced in experimental animals. (492)

TRIMESIC ACIDMice, female

(2) I.P. 21 mm/kg 10 min. before irr. 1025 r.

(3) 2 animals survived out of 10; all controls died. (377a)

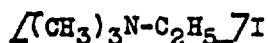
TRIMETHYL-SULFOXONIUM IODIDEMice R

(2) I.P. 400 mg/kg 30 min. before irr. 1007 r. ( $LD_{99/30}$ ).

(3) Did not protect from death. (369)

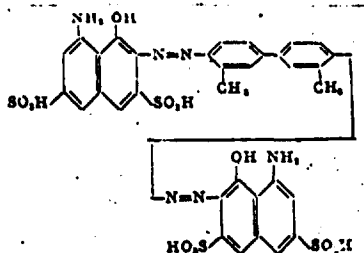
**2,2,4-TRIMETHYL-5-THIONEIMIDAZOLIDINE**Mice,  $C_3H$ , 12-18 weeks old

- (2) I.P. 5 min. before irr. 800 r.  
 (3) Survival 7-17%; all controls died. (720)

**TRIMETHYLETHYLAMMONIUM IODIDE**White mice, male, weight 18-20 g

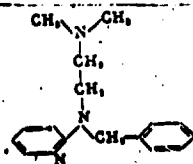
- (2) S.C. 15-20 min. before, and 20-30 min. after irr. 500 r.  
 (3) Survival 68.3% (with administration before irr.) and 33.8% (with administration after irr.); in controls, survival--35%. (272)

TRYPAN BLUE; parkipan, tripan blaw,  $[3,3'$ -dimethyldiphenyl]-4,4'-bis-(azo-2)-8-aminonaphthol-(1)-disulfonic acid-(3,6)]

Rats

- (2) Administered before, or after irr. 600 r.  
 (3) With administration before irr. increased radiosensitivity; with administration after irr. survival in experimental group--99%; in controls--40%. (328)

TRIPLENNAMINE; allergan P, azaron, benzoxal, pyribenzamin, piriamin, piribenzyl, resistamin, tonaril, epiril, N,N-dimethyl-N'-(2'-pyridyl)-N'-(p-methoxybenzyl)-ethylenediamine

Mice, male,  $CF_1$  line, weight 20-25 g

- (2) Internally 100 mg/kg 24 hours before irr. 600 r (20 r/min).  
 (3) By 30th day after irr. 90% of experimental animals died. (501a)



## TRYPTAMINE, 3-(2'-aminoethyl)-indole

Thymocytes of rats

- (2)  $10^{-5}$  M before irr. in vitro 300 r.
- (3) Did not protect from death. (394)

Mice

- (2) 5 min. before irr. 675-1200 r.
- (3) Protective action correlated with the degree of decrease in spleen oxygen consumption. (790)

Black mice, C57, weight 5 g, 8 days old

- (2) S.C. 156, 62, 31 mg 5 min. before irr. 550 r.
- (3) Epilatory effect of radiation absent only in those animals that received 156 and 62 mg of preparation. With smaller doses epilation was absent only at the site of subcutaneous infection. General epilation present in 19 mice out of 20 in controls. (710)

White mice, weight 18-20 g

- (2) S.C.  $^{60}\text{Co}$  1.5 mg/mouse 5-10 min. before irr. 700 r or gamma-irr. 1050 r.
- (3) Survival in experimental group correlated to the type of irr.: 13 and 18% respectively; all controls died. (289)

White mice

- (2) I.P. 100, 75, 50 mg/kg before irr. 700 r.
- (3) Survival respectively 36.6, 20, 8%; all controls died. (156)

White mice, male and female, weight 18-23 g

- (2) I.P. 100 mg/kg 5-10 min. before irr. 700, 800 r.
- (3) Survival in the first group 43.3%; in the second--0%; in controls, 1.4 and 0%. (355)

## TRYPTAMINE HYDROCHLORIDE

White mice

- (2) I.P. 100, 75, 50 mg/kg before irr. 700 r.
- (3) Survival respectively 40, 20.8, 30%; in controls, 0-5%. (111)

White mice

- (2) I.P. 100 mg/kg 10-15 min. before irr. 700 r.
- (3) Survival 30%; all controls died. (112)

Mice

- (2) I.P. 10-25 mg/kg during 5-7 days, starting from the second day after irr. 600-650 r.
- (3) Did not inhibit the formation of petechia. Dose 25 mg/kg intensified the severity of radiation sickness. (156)

## TRYPTOPHAN

Phage T 2

- (2) 8% with irr. 30,000-300,000 r (60,000 r/min) in the presence or absence of  $O_2$ .
- (3) Protected against death in the presence, as well as in the absence, of  $O_2$ . Survival with 300,000 r rose from 0.001 to 2.5%. (608)

Erythrocytes

- (2)  $3 \times 10^{-4}$  M before irr.
- (3) Protected against hemolysis. (469)

White mice, weight 18-20 g

- (2) S.C. 2 mg 5-10 min. before irr. 700 r.
- (3) Protective effect absent. (289) See also (606).

Guinea pigs

- (2) No entry.
- (3) Somewhat decreased epilation caused by roentgen irradiation. (623a)

## TRIPHOSPHONITRILIC ACID

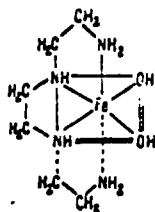
Mice, female

- (2) I.P. 60 mm/kg 10 min. before irr. 1025 r.
- (3) 4 animals survived out of 10; all controls died. (377a)

## TRIETHYLBENZYLAMMONIUM HYDROCHLORIDE

White mice, male, weight 18-20 g

- (2) S.C. 15-20 min. before irr., or 20-30 min. after irr. 500 r.
- (3) With administration before irr. the survival in experimental groups 44%; with administration after irr. the survival 25.7%; controls survival 35%. (272)

TRIETHYLENETETRAMINE; iron containing complex, (content  $Fe^{++}$  -  $10^{-4}$  M/l), TETA- $Fe^{++}$ White mice, male, weight 19-22 g

- (2) I.P. 400 mg/kg 15 min. before irr. 550 r.
- (3) Out of 16 experimental animals 10 survived; all controls died. (299)

White mice

- (2) Internally 400 mg/kg 1 hour before irr. 550 r.
- (3) Out of 16 experimental animals, 15 survived; out of 16 controls 5 survived. (299)

TRIETHYLENETETRAMINE; iron-containing complex, (content  $\text{Fe}^{+++}$   $10^{-6}\text{M/l}$ ), TETA- $\text{Fe}^{+++}$

Dogs, male, weight 14-16 g

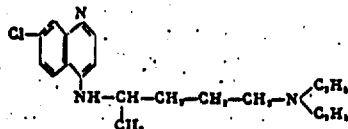
- (2) I.V. 50 mg/kg 15 min. before irr. 600 r.
- (3) By 45th day after irr., out of 5 experimental dogs 3 survived; all controls died. (299)

## THROMBOCYTIC MASS FROM DOGS

Dogs

- (2) I.V. 50-70 mlrd thrombocytes starting from 3-4 day and each 5-7 days after irr.  $\text{LD}_{50}$ . 3-5 transfusions in all, penicillin daily 200,000 units.
- (3) 12 animals survived out of 14; all controls died. (32)  
See also (3).

TROCHINE; chlorokhin, aralen, arekhin, artrikhin, avlochlor, bemafat, delagil, kontokhin, imagon, nivakhin, quinachlor, rezochin, sil'bezan, tanakan, trezokhin, W 7618, Win 244, 7-chlor-4-(4'-diethyl-amino-1'-methyl butylamino)-quinoline

White mice, female, weight 6-8 weeks old

- (2) 0.25 mg/kg before irr. 600 r or 800 r.
- (3) With irr. 600 r by 18th day after irr. out of 12 experimental mice 5 died; out of 12 controls--7 died; with irr. 800 r all controls died by the 8th day; and the experimental mice by the 11th day after irr. (572)

## UVINUL MS-40; 3-benzoyl-4-oxy-6-methoxybenzosulfonic acid

White mice, female, 6-8 weeks old

- (2) Before irr. 600 and 800 r.
- (3) With irr. 600 r by the 18th day after irr. out of 12 experimental mice 1 died; out of 12 controls--7 died. With 800 r all controls died by 8th day, and experimental animals by the 13th day. (572)

## CARBON DIOXIDE

CO<sub>2</sub>Tradescantia pollen

- (2) 1 atm. of CO<sub>2</sub> added to the air, 1 hour before, and 30 min. after gamma-irr. Co<sup>60</sup> 400 r. (88 r/min), or irr. with roentgen rays (100 and 240 r/min) 300 r; monoenergetic neutrons 14.1 Mev; neutrons with energy 0.5-2.0 Mev.
- (3) With gamma-irr., roentgen, and neutron irr. (14.1 Mev) increased number of chromosome changes (1.93, 2.39, and 1.17 times respectively) and of deletions (2.2, 3.45, and 1.25 times respectively). (596)

## ACETIC ACID

Bacteria Escherichia coli K 12

- (2) Present during the time of irr.
- (3) Protected against death. (634)

## UNITHIOL

White mice, male and female, weight 18-20 g, 8-12 weeks old

- (2) S.C. 20 mg/mouse 1.5 hour before gamma-irr. Co<sup>60</sup> 900 r (357 r/min).
- (3) Survival in experimental group 30%; all controls died. (83)

Mice, male, 2-3 months old

- (2) I.P., S.C. 800 mg/kg 30 min. before, or directly into eye 2-3 min. before irr. 600 r.
- (3) Parenteral administration did not prevent the fall of mitotic activity of cornea. The administration of preparation into the eye decreased the percentage of pathological forms of mitosis. (100a)

White mice, male, weight 18-22 g

- (2) I.P. 800 mg/kg 30 min. before irr. 700 r.
- (3) Absolute protective effect 50%. (151)

White mice, male and female, weight 18-20 g

- (2) 9, 14, and 20 mg at various times before gamma-irr. Co<sup>60</sup> 900 r.
- (3) Maximum protective effect with administration 30-60 min. before irr. (84)

Mice, weight 18-20 g

- (2) I.P. 600-800 mg/kg before irr. 600-700 r.
- (3) Survival increased 50%. (20)

Rats, male, weight 140-200 g

- (2) I.P. 50, 100, 200, 300, 400, 500, 600, and 800 mg/kg 30

min. before irr. 1000 and 1200 r. Internally 100, 200, 500, 800, 1000, 2000, and 3000 mg/kg 1 hour before irr. 1000 r.

- (3) With I.P. administration the increase in survival was observed with almost all the doses. With internal administration protective effect absent. (20)

White rats, male, weight 180-225 g

- (2) I.P. 400 mg/kg 30 min. before irr. 800 r.  
(3) Absolute protective effect 30%. (151)

Rats

- (2) 100 mg/kg once before irr.; daily after irr.; before, and daily after irr. 1000 r.  
(3) Survival respectively 52, 11, and 50%; in controls, 0%. (138)

Rats

- (2) S.C. 100 mg/kg 2 times a day, starting from the 1st hour after polonium "infection," and further for 5 d. Polonium administered once, subcutaneously, 0.1 mcurie/kg.  
(3) Decrease in sulfhydryl group content was expressed to a lesser degree, and occurred in later periods. (121)

Rabbits, male, weight 2-2.5 kg

- (2) I.P. 100 mg/kg 30 min. before irr. 1000 r.  
(3) Absolute protective effect 30%. (151)

Rabbits, sympathectomized

- (2) I.P. 100 mg/kg 30 min. before irr., 1000 r 10-25 and 30-60 days after sympathectomy. Controls--receiving preparation but not sympathectomized.  
(3) Corresponding to periods of irr. after sympathectomy, 4 and 7 survived out of 11. In controls, 7 survived out of 11. (18)

Dogs

- (2) I.P. 50 mg/kg 30 min. before irr.  
(3) In experimental dogs the glucose absorption from intestines decreased 35-45%. (214)

Dogs

- (2) I.P. 50 mg/kg 30 min. before irr. 500 r.  
(3) At 60 days, 6 experimental dogs survived; out of 4 controls--one. (213)

Dogs, male, weight 14-16 kg

- (2) I.P. 30 mg/kg 30 min. before irr. 500 r.  
(3) Protective effect absent. (151)

URACIL

Phage P 1 causing lysis of intestinal  
rod bacteria, strain 500

- (2) Preparation administered before gamma-irr.  $\text{Co}^{60}$  in phage suspension in concentration 0.01 and 0.001 mgM. Dose of gamma-irr. 5000 r (500 r/min).
- (3) Survival corresponding to concentrations of preparation, 100 and 11.2%; in controls, 1%. (326)

URACILAN; leucetan, ethylurethan

Paramecium caudatum

- (2) In subtoxic concentration with irr. 10,000 r (460 r/min).
- (3) Protected against inhibition of division tempo. (143)

Tadpoles of Rana sacculanta

- (2) 5 min. before, and during irr. 27,500 r (1100 r/min).
- (3) Average length of life increased from 13 to 15 days. (703)

White mice, of both sexes, weight 15-22 g

- (2) I.P. 0.70, 1.37, 1.75 mg/g 15 min. before irr. 480-640 r.
- (3) Survival respectively 30, 13, 11.8%; in controls, 75%. (244)

Mice, male, hybrids (C<sub>57</sub> X A)F

- (2) I.P. 1 mg/kg 30 min., 2 hours, or 7 days before irr. 870, 970, 1010, and 1670 r.
- (3) Protective effect absent. (423)

Mice, female

- (2) I.P. 1 mg/g 24 hours before irr. with lethal doses.
- (3) LD<sub>50</sub> and LD<sub>100</sub> respectively 970 and 1010 r; in controls, 790 and 840 r. (423)

Mice, female, strain H

- (2) I.P. 10 mg immediately before; or 10 mg daily, during 10 days, before gamma-irr.  $\text{Co}^{60}$  1000 r. (38-46 r/min).
- (3) Antiradiation effect absent. Criterion: survival. (179)

Mice, female, Baggs-Swiss line, weight 20-25 g

- (2) I.P. 1000 mg/kg 48 hours before irr. 800 r.
- (3) Survival by 30th day after irr. 50%; all controls died by 21st day. (725)

Mice, LAF line, 11-14 weeks old

- (2) I.P. 1 mg/kg twice with 24 hours intervals 1 day before irr. 500 rad. 24 hours after irr. transplantation of skin section from mice, line C<sub>3</sub>H.

- (3) In the group of experimental animals sloughing did not occur until the 40th day; in controls sloughing occurred 14-18 day after transplantation. (422)

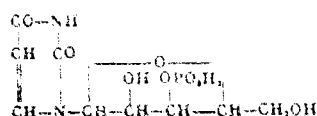
#### Dogs

- (2) 350 mg/kg 4 times before irr. 900 r with subsequent transplantation of homologous bone marrow.
- (3) Bone marrow transplantation showed itself to be effective in experimental animals, and not effective in controls. (422)

#### Guinea pigs

- (2) 0.1-0.4 g/kg before irr. of cerebellum 9000 r.
- (3) Cerebellum disorders absent. Changes in pyrrolic acid content of cerebellar tissue expressed in a lesser degree. (191) See also (245, 487a, 670).

#### URIDYLIC ACID



#### Mice

- (2) 2 or 5 mg 15 min. before irr. 600 r.
- (3) Survival 40 and 65%; in controls, 35%. (706)

#### PHELAZIN

##### White mice, guinea pigs, rabbits

- (2) I.P., I.V., or internally, at various times after irr.
- (3) In experimental animals, lighter course of radiation sickness. (271)

#### PHENATINE

##### "White Russian" chicken embryos

- (2) 1-2 mg into yolk sack, or 0.125 mg into amniotic sac 30 min. before irr. 400 or 600 r (38 r/min).
- (3) With administration of 2 mg into yolk sack the number of developed sclerotic papillae increased 29% with 400 r, and 15.8% with 600 r. Smaller concentrations had lesser protective effect. The curve of development of papillae did not change. (250)

##### White mice male, weight 18-22 g

- (2) I.P. 0.5 mg/kg 30 min. before irr. 700 r.
- (3) Absolute protective effect 12%. (151)

Rats

- (2) Administered in doses 25, 50, and 100 mg/kg once before irr.; daily after irr.; before, and daily after irr. 1000 r.
- (3) Protective effect absent; in larger doses showed detrimental effect on the survival of experimental animals. (138)

White rats, male, weight 180-220 g

- (2) I.P. 0.25 mg/kg 30 min. before irr. 800 r.
- (3) Protective effect absent. (151)

Rabbits, weight 1.7-2.5 kg

- (2) S.C. 0.5, 1, 3, 5 and 10 mg/kg 1 day, and 30 min. before gamma-irr.  $\text{Co}^{60}$  800 r (4.87 r/min) and during 20 days after gamma-irr. twice a day, after this for 10 days, once a day.
- (3) Protective effect only with doses 1 and 3 mg/kg, 4 animals survived out of 10; all controls died within 10 days. (19)

Rabbits, male, weight 2-2.5 kg

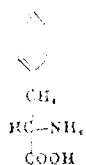
- (2) I.P. 0.25 mg/kg 30 min. before irr. 1000 r.
- (3) Protective effect absent. (151)

## PHENETHYLAMINE

Mice

- (2) S.C. 5 mg/mouse before irr. 650 r.
- (3) Survival 30%. (490)

## PHENYLALANINE; alpha-amino-beta-phenyl-propionic acid

Phase T 2

- (2) 8% with irr. 30,000-300,000 r (60,000 r/min).
- (3) Protected against death. Survival with 300,000 r increased from 0.001 to 0.5%. (608)

Erythrocytes

- (2)  $1 \times 10^{-3}$  M before irr.
- (3) Markedly protected against hemolysis. (469)

## N-PHENYLAMIDINETHOPHEN-2-CARBOXYLIC ACID

Bacteria Staphylococcus aureus

- (2) 1% lactic acid solution diluted and added before gamma-irr.  $\text{Co}^{60}$  35 kr.



- (3) Markedly sensitized to irr. with dilution 1:300-1:30,000. (259)

Candida albicans

- (2) 1% acetic acid solution diluted and added before gamma-irr. Co<sup>60</sup> 50 kr.
- (3) Markedly protected against death with concentration 1:500-1:2500, but did not protect with concentration 1:4000 and higher. (259)

Bacteria B. anthracis and B. cereus

- (2) 1% acetic acid solution diluted 500-9000 times and added before gamma-irr. Co<sup>60</sup> 300 kr.
- (3) Did not protect against death. (259)

White rats, male and female, weight 170-230 g

- (2) I.P. 36-60 mg/kg 5-8 min. before irr. 720 r.
- (3) Survival 35 and 60%; in controls--25%. (671)

White rats, weight 190-220 g

- (2) I.P. 5-10 min. before irr. 720 r.
- (3) By 30th day after irr., out of 40 experimental animals 14 survived; out of 40 controls, 2 survived. (218)

White rats, male

- (2) 0.05/100 g 5 min. before irr. 650 r.
- (3) Improved maturation of blood forming elements and increased reticulocyte content. (615)

N-PHENYLBENZAMIDINE-THIOPHEN--2-CARBOXYLIC ACID

Bacteria B. anthracis and B. cereus

- (2) 1% acetic acid solution diluted 500-9000 times and added before gamma-irr. Co<sup>60</sup> 300 kr.
- (3) Did not protect against death. (259)

Candida albicans

- (2) Before gamma-irr. Co<sup>60</sup> 50 kr.
- (3) Markedly protected against death with concentration 1:5000(sic)-1:2500 and did not protect with concentration 1:4000 and higher. (259)

Bacteria Staphylococcus aureus

- (2) 1% acetic acid solution diluted 3600 times and added before gamma-irr. Co<sup>60</sup> 35 kr.
- (3) Sensitized somewhat to radiation. (259)

4-PHENYL-2-HYDROZINOTHIAZOLE

White mice, weight 17 g

- (2) I.P. 50 mg/kg 5, or 30 min. before irr. 900 r.

- (3) Protective effect absent. (454)

# 5-PHENYL-2-HYDRAZINOTHIAZOLE

White mice, weight 17 g

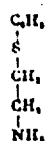
- (2) I.P. 1, or 50 mg/kg 5, or 30 min. before irr. 900 r.  
(3) Protective effect absent. (454)

# 2-PHENYL-4,4-DIMETHYL-5-THIONEIMIDAZOLIDINE

Mice, C<sub>3</sub>H, 12-18 weeks old

- (2) I.P. 5 min. before irr.  
(3) Survival 7-17%; all controls died. (720)

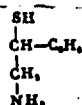
# S-PHENYL-beta-MERCAPTOETHYLAMINE



White mice

- (2) I.P. in 2-3 doses, one a maximum dose, 5-15 min. before irr. in absolute lethal doses (700 r).  
(3) Out of 10 experimental animals, 4-6 survived; all controls died. (311)

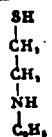
# beta-PHENYL-beta-MERCAPTOETHYLAMINE



Mice

- (2) I.P. 2 mg; I.V. 1 mg, or S.C. before irr. with lethal doses.  
(3) Marked protective effect only with I.P. administration. (777)

# N-PHENYL-beta-MERCAPTOETHYLAMINE



Mice

- (2) I.P. in few doses, one a maximum dose, 5-15 min. before irr. with roentgen or gamma-rays Co<sup>60</sup> in absolute lethal doses.

- (3) Survival 30-50%; in controls, 0%. (312)

# N-PHENYLTHIOUREA



## Mice

- (2) I.P. 5, 10 mg/kg before irr. 800 r.  
(3) Antiradiation effect absent. (451)

# N-PHENYL-2-FURAMIDINTHIOPHEN-2-CARBOXYLIC ACID

## Bacteria B. anthracis and B. cereus

- (2) 1% acetic acid solution diluted 500-9000 times and added before gamma-irr. Co<sup>60</sup> 300 kr.  
(3) Did not protect against death. (259)

## Candida albicans

- (2) Before gamma-irr. Co<sup>60</sup> 300 kr.  
(3) Markedly protected against death with concentration 1:500 up to 1:2500, and did not protect with concentration 1:4000 and higher. (259)

## Bacteria Staphylococcus aureus

- (2) 1% acetic acid solution diluted up to 36,000 times and added before gamma-irr. Co<sup>60</sup> 35 kr.  
(3) Sensitized somewhat to radiation. (259)

# PHENYLCYSTEINE

## No entry

- (2) No entry.  
(3) (353).

# beta-PHENYLETHYLAMINE

## Mice

- (2) 5 min. before irr. 675-1200 r.  
(3) Protective action correlated with the degree of decrease in spleen oxygen consumption. (790)

# 3-alpha-PHENYLETHYL-5-CYANOCYTOSINE

## Mice, male CF<sub>1</sub> line, weight 20-25 g

- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).  
(3) All experimental animals died by 16th day after irr. (501a)

## N-PHENYLETHYL-beta-MERCAPTOETHYLAMINE

Mice

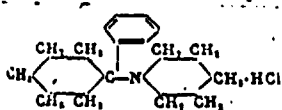
- (2) I.P. in few doses, one a maximum dose, 5-15 min. before irr. with roentgen or gamma-rays  $\text{Co}^{60}$  in absolute lethal doses.
- (3) Protective effect absent. (312)

## PHENYLEPHRINE

Mice

- (2) Before irr. 700 r.
- (3) Pronounced protective effect. (358)

## PHENCYCLIDINE; 1-(1'-phenylcyclohexyl)-piperidine hydrochloride, Cl-395

Mice, female, weight 20-25 g, 14 weeks old

- (2) I.P. 4 mg/kg 30 min. before irr. with various doses of roentgen rays.
- (3)  $\text{LD}_{50/30}$  with  $725.5 \pm 15.8$  r in control group increased to  $828.0 \pm 15.9$  r in the experimental group. (814b).

## FERAMID I (complex iron compound)

Rats

- (2) S.C. 2 mg/kg daily, during 15 days after irr. 600 r.
- (3) Protective effect absent. (11)

## FERAMID II (complex iron compound)

Rats

- (2) S.C. 2 mg/kg daily during 15 days after irr. 600 r.
- (3) More rapid restoration of peripheral blood. (11)

## PHYSIOLOGICAL SOLUTION

White mice

- (2) I.P. 0.2 ml 10-15 min. before irr. 700 r.
- (3) Protective effect absent. (154)

FOLIC ACID; vitamin M, vitamin  $\text{B}_{11}$ , piofolin, folacid, folbal, folcidin, foldin, foliamin, foliail, folinor, citofolMice, male and female, strain H

- (2) I.P. 1 mg immediately before gamma-irr.  $\text{Co}^{60}$  1000 r (38-46 r/min).
- (3) In 5.5 days after irr., mortality 75%; in controls, 100%. (179)

Mice

- (2) No entry.
- (3) Insignificant protective effect. (515)

Guinea pigs, male, weight 300-400 g

- (2) 1 and 0.1 mg/kg during 3 weeks before irr. 3 times a week; or in doses 1 and 0.1 mg/kg during the whole period of irr. 3 or 2 times a week. Irr. 6 times a week, 10 r each sitting up to total dose 600 r.
- (3) Positive effect only with therapeutic application 1 mg/kg 3 times a week. (44)

FOLLICULIN; ginecid, cristallovir, cristogen, ketoxydestrin, kolpan, libifollin, ovasterol, perlitan, solestrin, telestrin, telekinin, tokokin, unden, femidin, follestrin, follesterol, estrogen, estron, estruzol, estrobion, estrogenon

Mice

- (2) 10 days before gamma-irr. 700 r.
- (3) Increased survival. (159)

White mice, and rats, male and female

- (2) S.C. in butyric solution 0.1-10 mg once, or twice, 5-10 days before and 1 hour after gamma-irr. 650-700 r for mice, and 700-750 r for rats.
- (3) Protective effect absent. (94)

FORMALDEHYDE BISULFATE COMPOUND of 2-AMINO-5-MERCAPTOTHIODIAZOLE

Rats

- (2) I.P. 300 mg/kg 20-25 min. before gamma-irr. Co<sup>60</sup> 700 r (572-522 r/min).
- (3) Protective effect absent. (254)

PHOSARBIN; pirophos

Dogs

- (2) S.C. 0.01 mg/kg, once a day, for 5 days before irr. 600 r, or 1 hour after irr. and then 5 times in one day--the day preceding theoretical peak of mortality.
- (3) All experimental animals survived; all controls died on 11-15th day after irr. (174)

PHOSPHATE BUFFERS

Cells of Erlich ascites carcinoma

- (2) 85-110 mM/l before irr. 25 and 45 kr.
- (3) Protected against inhibition of glycolysis. (450)

4-ANTIPYRYL of NICOTINIC ACID AMIDE PHOSPHATE

Cats

- (2) S.C. 10 mg/kg 2 times a day, during 20 days after irr. 800 r.

- (3) Survival of experimental and control animals was the same. (337a)

FREON -12; dichlorodifluoromethane

$\text{CCl}_2\text{F}_2$

Germinating seeds of beans *Vicia faba*

- (2) In calorimetric bomb 1-2 atm.  $\text{CCl}_2\text{F}_2$  added to 1 atm. air and held 10 min. before, during, and 5 min. after irr. 200 r (50 r/min).
- (3) Protected against growth inhibition. (225)

FREON-13, monochlorotrifluoromethane

$\text{CClF}_3$

Germinating seeds of beans *Vicia faba*

- (2) In calorimetric bomb up to 30 atm.  $\text{CClF}_3$  added to 1 atm. air and held 10 min. before, during, and 5 min. after irr. 200 r (50 r/min).
- (3) Maximum protection obtained with 10 atm.  $\text{CClF}_3$ . (225)

FREON-14, tetrafluoromethane

$\text{CF}_4$

Germinating seeds of beans *Vicia faba*

- (2) In calorimetric bomb up to 15 atm.  $\text{CF}_4$  added to 1 atm. air and held 10 min. before, during, and 5 min. after irr. 200 r (50 r/min).
- (3) 15 atm gave maximum protection against growth inhibition. (225)

FREON-22, monochlorodifluoromethane

$\text{CHClF}_2$

Germinating seeds of beans *Vicia faba*

- (2) In calorimetric bomb 1 atm  $\text{CHClF}_2$  added to 1 atm. air and held 10 min. before, during, and 5 min. after irr. 200 r (50 r/min).
- (3) Showed some protection against growth inhibition. (225)

FRUCTOSE

Rat liver mitochondria

- (2) Before, or after irr. in vitro 50 r.
- (3) Decreased inactivation of ferments, oxydizing citrates, with administration before but not after irr. (478)

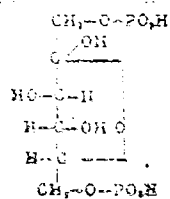
Mice, line  $\text{C}_{57}$

- (2) I.P.  $1.5 \times 10^{-3}$  M 5 min. before irr. 700 r.
- (3) 8 mice survived out of 10; all controls died. (360)

Rats, weight 115-160 g

- (2) I.P. 0.05/100 - during 30 days after irr. 600 r.  
 (3) Decrease in hemoglobin content of peripheral blood was less marked than in controls. (544)

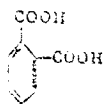
FRUCTOSO-1,6-DIPHOSPHATE; fructose-1,6-diphosphoric ether



White mice

- (2) I.P. 0.75 mg on the second day after irr. 800 r.  
 (3) Survival by 60th day--10%. (366)

PTHALIC ACID



Mice, female

- (2) I.P. 9 mm/kg 10 min. before irr. 1025 r.  
 (3) Out of 10 experimental animals 3 survived; all controls died. (377a)

FLUORACETATE; fluoracetic acid



Mice

- (2) 4-5 mg/kg 5 hours before irr. 650-675 r.  
 (3) Survival 50%; in controls--5%. Administration of preparation without irr. caused death of 30% of mice in the first 2 days. (375)

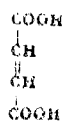
SODIUM FLUORACETATE; fluoracetic acid sodium salt



Bacteria Escherichia freundii EF5

- (2)  $10^{-4}$  M before irr. of aqueous suspension 54,000 r.  
 (3) Protected against death with DRP=1.5 (from 1.1 to 1.8). (612)

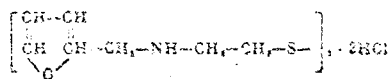
FUMARIC ACID



Rats with transplanted MTK-III sarcoma

(2) I.P. before irr.

(3) Weakened effect of radiation. (663)

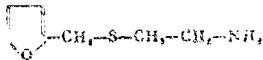
bis-N-FURFURYLAMINOETHYL-DISULFIDE DIHYDROCHLORIDEYeasts Saccharomyces vini, Megri strain 139 B(2)  $10^{-3}$  -  $10^{-6}$  M 15-20 min. before irr. 30, 45, 60 kr (1000 r/min).

(3) Did not protect against death. (185)

FURFURYL-MERCAPTANMice

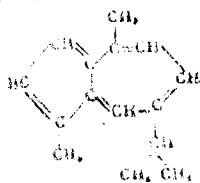
(2) No entry.

(3) (451).

S-FURFURYL-beta-MERCAPTOETHYLAMINE; furfurolmercaptamineWhite mice

(2) I.P. in 2-3 doses, one a maximum dose, 5-15 min. before irr. with absolute lethal dose. (700 r)

(3) Out of 10 experimental animals, 4-6 survived; all controls died. (311)

CHAMAZULEN; 1,4-dimethyl-7-ethylazulene, azulon, purazulen, uroazulen, AZ-8White mice, female, strain H, weight 17 g

(2) I.P. 0.5 mg in 0.25 ml 30% ethanol before irr. 900 r.

(3) Antiradiation effect absent. (330)

Rabbits

(2) I.M. 50 mg during 14 days before local irr. of skin sector. 3000 r.



- (3) Dehydrogenase activity of lactic and malic acid in irradiated skin sectors of control animals fluctuated sharply; the activity of these ferments was moderately increased in experimental animals. (557)

#### 5-QUINAZOLINOL-3-OXIDE

Mice, male, CF<sub>1</sub> line

- (2) Internally 250 mg/kg 24 hours before irr. 600 r.  
 (3) Survival by 30th day after irr. 45%; in controls, 5-10%.  
 (501)

#### QUINACRINE; achrichine

Mice, male, CF<sub>1</sub> line, weight 20-25 g

- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).  
 (3) 90% of experimental animals died by 11th day. (501a)

#### QUINACRINE -10-OXIDE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).  
 (3) By 30th day after irr. 90% of experimental animals died. (501a)

#### QUINACRINE-N-omega-OXIDE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

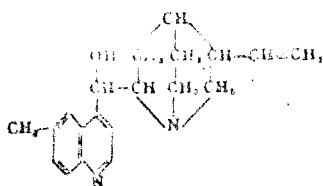
- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).  
 (3) By 30th day after irr., 95% of experimental animals died. (501a)

#### QUINACRINE-N-omega-10-DIOXIDE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).  
 (3) By 30th day after irr. 85% of experimental animals died.  
 (501a)

QUINIDINEDITHYDROCHLORIDE: quinotol, conchicine, conchinine, quinidine, pitain, stereoisomer  $\alpha$ -5-vinylquinuclidyl-(2)-[6'-methoxyquinolyl-4']-carbinol



Rats, male, weight 150-225 g

- (2) I.P. 125 mg/kg before irr. of abdominal area 1500 r

(field size-11.3cm<sup>2</sup>). Irradiated animals were under nembutal narcosis (25 mg/kg I.P.) and then 0.4 ml/100 g 1% trypan blue solution administered I.V.

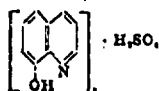
- (3) Investigation 48 hours after irr. showed vascular permeability of intestines in experimental animals to be less than in controls. (816)

#### QUINIDINE SULFATE

Rats, male, weight 150-225 g

- (2) I.M. 250 mg/kg in 10% propylglycol solution before irr.; or 150 mg/kg 24 hours after irr. of abdominal area, 1500 r (field size 11.3cm<sup>2</sup>). Irradiated animals were under nembutal narcosis (25 mg/kg I.P.), and then 0.4 ml/100 g 1% trypan blue solution administered I.V.
- (3) Investigation 48 hours after irr. showed vascular permeability of intestines in experimental animals to be less than in controls. (816)

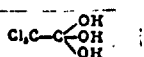
QUINOSOL; idril, kryptonol, oxyquinol, soloxin, superol, 8-oxyquinoline sulfate



Mice, male, strain H

- (2) I.P. 0.5-1 mg immediately before gamma-irr. Co<sup>60</sup> 1000 r (38-46 r/min).
- (3) At 5.5 days after irr., mortality 91.7%. By this time, all controls had died. (179)

CHLORAL HYDRATE, aquachloral, lorinal, likoral, medianox, orfofarin, somnos, chloraldurat, 1,1-dioxy-2,2,2-trichlorethane



Tadpoles of Rana esculenta

- (2) 0.3% 15 min. before, and during irr. 27,500 r (1100 r/min).
- (3) Average length of life increased from 5 to 8 days. (703)  
See also (704).

Guinea pigs

- (2) S.C. 4.5 ml 2% solution 45-60 min. after local irr. with contact roentgen therapy (Shaul apparatus) of 2 fields on both sides of the body. 850 r per field.
- (3) Protective effect absent. (396) See also (505).

CHLORAMPHENICOL; chlormycetin, levomycetin

Seeds of beans Vicia faba

- (2) 300 mkg/ml during 75 min. between first dose, 600 r, in vacuum, and the second, 300 r, in air.

- (3) Increased number of two-hit aberrations at the expense of postradiation inhibition of recovery.

Bacteria Haemophilus influenzae

- (2) 50 mg/ml during 15 minutes at 0°C. after irr. 48 hr.  
(3) Had no effect on the postradiation breakdown of DNA. (757)

Erllich ascites carcinoma

- (2) In vitro and in vivo.  
(3) Did not change the number of chromosome aberrations during anaphases. (740)

1-CHLORACETYLAMINOPHENOXAZINE

Yeasts Saccharomyces vini

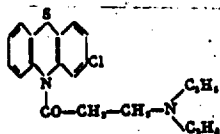
- (2) Added in concentration  $10^{-8}$  M/ml to culture before gamma-irr.  $\text{Co}^{60}$  5000 r. in aqueous solution.  
(3) Pronounced protective effect. (114)

10-CHLORACETYL-PHENOXAZINE

Yeasts Saccharomyces vini

- (2)  $10^{-8}$  M/ml before gamma-irr.  $\text{Co}^{60}$  5000 r in aqueous solution.  
(3) Protective effect absent. (114)

CHLORACIZINE; 3-chlor-10 (beta-diethylaminopropyl)-phenotiazine



Mice

- (2) S.C. 2.5-10 mg/kg before irr. 500 and 700 r.  
(3) Some protective effect with the dose 2.5 mg/kg only. (296)

4-CHLORBENZYL DIMETHYLDITHIOCARBONATE

Mice

- (2) I.P. 50, 100 mg/kg before irr. 800 r.  
(3) Protective effect absent. (451)

2-CHLORBENZOTHAZOLE

Mice

- (2) I.P. before irr. 800 r.  
(3) Slight protective effect. (451)

ETHYL ESTER 2-AMINOPYRIMIDYL-4-o-BENZOIC ACID HYDROCHLORIDE

White mice

- (2) S.C. 100 and 150 mg/kg in propyleneglycol

10-15 min. before irr. 700 r.

- (3) Protective effect absent. (154)

ETHYL ESTER 2-AMINO-PYRIMIDYL-4-p-AMINOBENZOIC ACID HYDROCHLORIDE

White mice

- (2) S.C. 15 and 25 mg/kg in propyleneglycol 10-15 min. before irr. 700 r.

- (3) Protective effect absent. (154)

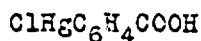
3-CHLOR-10-(3-DIMETHYLAMINOPROPYL)-PHENOTHIAZINE; CPZ

Mice

- (2) 35 mg/kg 15 min. before irr. 950 r.

- (3) Protective effect absent. (788)

p-CHLORMERCURYBENZOATE; p-chlormercurybenzoic acid



Yeasts, diploid and haploid strains

- (2) Before irr. in aerobic and anaerobic conditions.

- (3) Protected diploid strains in aerobic and anaerobic conditions with DRF=1.4; did not protect haploid strains. (407)

p-CHLORMERCURYPHENYL SULFONIC ACID

Cells of Erlich ascites carcinoma

- (2) 0.5 mkM/ml in physiological solution before irr. 2000 and 4000 r (400 r/min).

- (3) Did not protect RNA I and RNA II. (509)

5-CHLOR-2-METHYLBENZOTHAZOLE

Mice

- (2) I.P. before irr. 800 r.

- (3) Slight antiradiation effect. (451)

CHLOROPHYLLIN OF SODIUM, isolated from pine

Mice

- (2) I.P. before irr. (LD<sub>50</sub> preparation 59 mg/kg).

- (3) Increased length of life; normalized blood picture. (172)  
See also (171a).

CHLOROFORM; formyltetrachloride, trichlormethane



Fadpoles of Rana esculenta

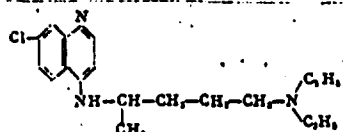
- (2) 0.1% 5 min. before irr. 27,500 r (sic) (1100 r/min).

- (3) Average length of life increased from 5 to 9 days. (703)

White mice, male and female, weight 15-22 g

- (2) Inhaled, in concentrations 0.042, 0.085, 0.128 ml/l during 10-12.5 min. Irr. 480-640 r conducted 3 min. after the start of narcosis.
- (3) Survival respectively 10, 25, 62.9%; in controls, 35 and 48.6%. (244) See also (245).

CHLOROQUINE; avlochlor, aralen, arechin, atrochin, gontochin, sanochin, resochin, resochen, tanakan, trezochin, trochin, W 7618, 7-chlor-4-(4'-diethyl-amino-1'-methylbutylamino)-quinoline

White mice, female, 6-8 weeks old

- (2) 0.25 g/kg before irr. 600 r or 800 r.
- (3) With irr. 600 r by 18th day after irr., out of 12 experimental mice 9 died; out of 12 controls, 7 died. With irr. 800 r all controls had died by 8th day after irr., and the experimental animals by the 10th. (572)

## CHLORPROPHEPYRIDAMINE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).
- (3) By 30th day after irr. 85% of experimental animals had died. (501a)

## CHLORPROPHEPYRIDAMINE-N-OXIDE

Mice, male, CF<sub>1</sub> line, weight 20-25 g

- (2) Internally 250 mg/kg 24 hours before irr. 600 r (20 r/min).
- (3) By 30th day after irr., 80% of experimental animals had died. (501a)

CHLORTETRACYCLINE; auromycin, biomycin, chlorocycline, chrysomycin, duomycin, 1-dimethylamino-1,4,5,8,15,16,17,18-octahydro-2,5,6,10,15-pentaoxy-4 8-diketo-13-chlor-15-methyl-3-naphthacencarboxamide

Mice

- (2) With food, during the whole period of observation after fractional irr. over 3 weeks, 250 rad per dose. Summary dose--750 rad.
- (3) Inhibited development of bacteremia. (613)

CHLORTETRACYCLINE; void of antimicrobial properties

Mice

- (2) 20 mg/kg 40 min. before gamma-irr. Co<sup>60</sup> 800 r (370 r/min).
- (3) Average length of life, 7.1 days; in controls, 5.1. (113)  
See also (251a).

## CHLORPROPANE

Mice, male, weight 18-20 g

- (2) I.P. 1-2 mg/kg 10-15 min. before irr.; 10-15 min. after irr. 700-800 r (36.6 r/min).
- (3) Protective effect absent. (131)

Rabbits

- (2) I.V. 1-2 mg/kg 10-15 min. before irr.; 10-15 min. after irr. 1000 r.
- (3) Normalization of leukocyte content of peripheral blood. (131)

## 6-CHLORTRYPTAMINE HYDROCHLORIDE

White mice

- (2) I.P. 60.8 mg/kg before irr. 700 r.
- (3) Mortality, 94%; in controls, 95-100%. (111)

## 5-CHLORTRYPTAMINE HYDROCHLORIDE

White mice

- (2) I.P. 121.6, 75, 30.4, 15, 5 mg/kg before irr. 700 r.
- (3) Mortality respectively 75, 42, 73, 83, 98%; in controls, 95-100%. (111)

## N-(4-CHLORPHENYL)-RHODANINE

Mice

- (2) I.P. 100 mg/kg before irr. 800 r.
- (3) Insignificant antiradiation effect. (451)

## 3-CHLORPHENYLTHIOURACIL

Mice

- (2) Before irr. 800 r.
- (3) Some increase of survival. (776)

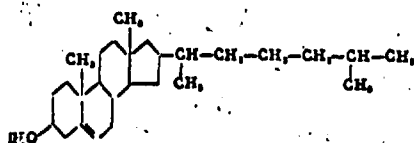
## CHLORQUININE SULFATE

Rats, male, weight 150-225 g

- (2) I.M. 40 mg/kg before irr., and 25 mg/kg 24 hours after irr. of abdominal area, 1500 r (field size 11.3cm<sup>2</sup>). Irradiated animals under nembutal narcosis (25 mg/kg I.P.) and then 0.4 mg/100 g 1% trypan blue solution administered intravenously.

- (3) Investigation 48 hours after irr. showed vascular permeability of intestines in experimental animals to be less than in controls. (816)

### CHOLESTERINE



#### Mice, male, strain H

- (2) I.P. 2-3 mg immediately after gamma-irr.  $\text{Co}^{60}$  1000 r (38-46 r/min).  
 (3) In 7.5 days all experimental and control animals died. (179)

### CHOLION

#### Mice

- (2) No entry.  
 (3) Insignificant protective effect. (515)

### CERIUM, oxides and nitrates

#### Rats

- (2) I.P. 400 mg/kg before gamma-irr.  $\text{Co}^{60}$  800 r.  
 (3) Protective effect absent. (646)

### CEPHARANTHINE



#### Mice

- (2) S.C.  
 (3) Decreased mortality. (684)

#### Rabbits

- (2) No entry.  
 (3) (458).

### CYANAMIDE



#### White mice, male, weight 18-20 g

- (2) Internally 0.001 g/mouse 20-30 min. before, immediately

after, or 30 min. after gamma-irr.  $\text{Co}^{60}$  700 r.

- (3) Survival with prophylactic administration, 9-10%; in controls, 5%. (42)

#### POTASSIUM CYANIDE

Mice, male and female, strain H

- (2) I.P. 0.1 mg immediately before gamma-irr.  $\text{Co}^{60}$  1000 r (38-46 r/min).
- (3) In 7.5 days the mortality, 91.7%; all controls died in 5.5 days after irr. (179)

Mice, female, weight 18-20 g, CBA line

- (2) I.P. 50, 75, and 100 gamma/mouse before irr. 675 r.
- (3) By 30th day after irr., survival 8, 30, 81% respectively; in controls, 2%. (789)

#### SODIUM CYANIDE

Germinating seeds of cress-lettuce

Lepidium sativum and beans Pisum sativum

- (2)  $10^{-4}$  -  $10^{-2}$  M during 2 hours before irr. with various doses (80 r/min).
- (3) Did not protect against growth inhibition or against changes in dry weight. (716)

Sections of undifferentiated carcinoma of mice

- (2) 0.01 or 0.001 M 20 min. before irr. 4000 r (130 r/min).
- (3) Decrease in the frequency of development of transplanted tumors. (502)

Mice

- (2) No entry.
- (3) Marked protective effect. (515) See also (673).

Mice,  $\text{CF}_1$  line

- (2) I.P. 2-5 mg/kg 3-6 min. before irr.
- (3) Protective action increased with increase in dosage of preparation. (737a)

Rats, Sprague-Dawley line

- (2) Before irr. 850 r.
- (3) Protective effect only with dose > 3 mg/kg. (737a)

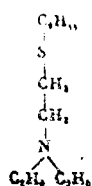
White rats, male and female, pure line  
weight 125 g

- (2) I.P. 1.5 or 3 mg/kg immediately before irr. 800 r.
- (3) Mitotic index in the bone marrow of experimental animals on the 6th and 9th day of irr., 0.82-0.82 and 0.80-0.85,



respectively; in controls, 0.30-0.37. (439)

S-CYCLOHEXYL-N-DIETHYL-beta-MERCAPTOETHYLAMINE



White mice

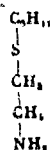
- (2) I.P. in 2-3 doses, one a maximum dose, 5-15 min. before irr. with absolute lethal dose. (700 r)
- (3) Out of 10 animals, 2-3 survived; all controls died. (311)

N-CYCLOHEXYL-2-BENZOTHAZOSULFAMIDE

Mice

- (2) I.P. 500, 1000 mg/kg before irr. 800 r.
- (3) Antiradiation effect absent. (451)

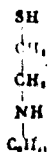
S-CYCLOHEXYL-beta-MERCAPTOETHYLAMINE



White mice

- (2) I.P. in 2-3 doses, one a maximum dose, 5-15 min. before irr. with absolute lethal dose (700 r).
- (3) Out of 10 experimental animals, 2-3 survived; all controls died. (311)

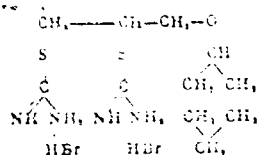
N-CYCLOHEXYL-beta-MERCAPTOETHYLAMINE



Mice

- (2) I.P. in few doses, one a maximum dose, 5-15 min. before irr. with roentgen or gamma-rays  $\text{Co}^{60}$  in absolute lethal doses.
- (3) Protective effect absent. (312)

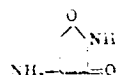
## CYCLOHEXYL ETHER OF 2,3-DI-(ISOTHIURONIUM BROMIDE)-PROPANOL

White mice

(2) I.P. 50 and 75 mg/kg 10-15 min. before irr.

(3) Protective effect absent. (343)

CYCLOSERINE; orientomycin, oxamycin, seromycin, serocyclin, MK-55, PA-94, R01-9213, D-4-amino-3-isoxazolidinon

Guinea pigs

(2) 12 mg/kg.

(3) Had no effect on shock caused by lethal doses of roentgen irr. (442b)

CYCLOPHOSPHAMIDE; endoxan

No entry

(2) No entry.

(3) (414).

CYCLODIMETHYLDITHIOCARBAMATE

Mice

(2) I.P. 50, 100 mg/kg before irr. 800 r.

(3) Antiradiation effect absent. (451)

ZINC SULFATE

 $\text{ZnSO}_4$ White rats, 3-4 months old

(2) S.C., or with food 0.0025 - 0.05 g/ml per day, before or after irr. 400-600 r.

(3) Insignificant antiradiation effect. (752a)

Rats with MTK-III sarcoma

(2) I.P. before or after irr.

(3) Before irr. weakened the radiation effect on mitosis of sarcomatous cells. After irr. ineffective. (481)

dl-CIS-2-AMINOCYCLOHEXANTHIOL

Rats

(2) No entry.

(3) (586).

## CYSTAMINE

Germinating seeds of beans "Alaska Express"

- (2) During irr.
- (3) Did not protect against growth inhibition. (374)

Bacteria Escherichia coli and Shigella flexneri

- (2) 0.004 M before irr. with various doses (2000 rad/min) in air, in  $N_2$ , or in the presence of 1.8%  $O_2$  in  $N_2$ .
- (3) Did not protect against death in any of the gaseous media. (543)

Infusoria Paramecium caudatum

- (2) 0.0017, 0.0033 and 0.0166 mg/ml 15 min. before irr. 100 kr (7200 r/min) at 1-3°C., in air, and in vacuum.
- (3) In concentrations up to 0.0033 mg/ml protected against death, but did not decrease the disorders of division tempo. In vacuum showed additional protection against death. With concentration 0.0166 mg/ml somewhat increased injury (both criteria), even with irr. in vacuum. Had no effect on the radiation elimination of  $H_2O_2$ . (86)

Paramecium caudatum

- (2) In subtoxic concentrations with irr. 10,000 r (460 r/min).
- (3) Very weakly protected against inhibition of division tempo. (143)

Chicken embryos

- (2) 1 mg into embryonic sac, or 1.25 mg into extra-embryonic cavity 1-240 min. before irr. 850-1000 r (100 r/min).
- (3) Did not protect against death. (680)

Tissue culture of fibroblasts and myoblasts of chicken and mice embryos

- (2) 1:200,000 in Tired solution 10 min. before and during irr. 400-750 r.
- (3) Did not protect; and with some concentrations even intensified inhibition of growth and of mitosis. (778)

Fibroblasts of mice, strain L

- (2)  $0.75 \times 10^{-3}$  and  $1.5 \times 10^{-3}$  M 60 min. before irr. 145-1160 r (70 r/min).
- (3) Did not protect against death either with light toxic ( $1.5 \times 10^{-3}$  M) or with non-toxic ( $0.75 \times 10^{-3}$  M) concentration. (771)

Corneal epithelium of white rats

- (2) I.P. 60 mg/kg before gamma-irr.  $Co^{60}$  65 r (0.21 r/min).
- (3) Had no effect on dynamics of mitotic activity during the period from 1 hour to 48 days after irr. (52)

Epithelium of crypts of duodenum of white rats

- (2) I.P. 60 mg/kg before gamma-irr. Co<sup>60</sup> 65 r (0.21 r/min).
- (3) Had no effect on dynamics of mitotic activity during the period from 1 hour to 48 days after irr. (52)

Tissue culture of spleen of white rats

- (2)  $5 \times 10^{-4}$  -  $1 \times 10^{-3}$  M in culture medium with irr. 1040 r (80 r/min).
- (3) Protected with subtoxic ( $10^{-3}$  M) concentration against inhibition of mitotic activity. Average number of mitoses increased from 2.3 to 17.85%. (297)

Human kidney cells (tissue culture)

- (2) 2-54 mM 30 min. before irr. 500-1500 rad (200 r/min).
- (3) Did not protect against death. (802)

White mice

- (2) Internally 400 mg/kg 30 min., 1 hour, 1.5 hour, before irr. 700 r.
- (3) Survival 8, 48, 38% respectively; all controls died. (156)

White mice

- (2) Internally 400 mg/kg 30-40 min. before fractional gamma-irr. Co<sup>60</sup> during 6-10 days (total dose 1000-2000 r); preparation administered before each irr.
- (3) Survival 8-75% higher than in controls. Observed weakened symptoms of radiation sickness and an increase in the length of life. (277)

White mice, male, weight 18-22 g

- (2) I.P. 150 mg/kg 30 min. before irr. 700 r.
- (3) Absolute protective effect 42%. (151)

White mice, weight 18-22 g, 8-12 weeks old

- (2) S.C. 5 mg/mouse 15, 30, 60, 120 min. before gamma-irr. Co<sup>60</sup> 900 r (378 r/min).
- (3) Maximum increase of survival with dose administered 15 and 30 min. before irr. Antiradiation effect was not connected with changes in the oxygen content of spleen and liver. (82)

White mice, male and female, weight 18-22 g

- (2) I.P. 150 mg/kg 20-30 min. before irr. 700 r, or with protons 660 Mev 1500 rad.
- (3) Survival in the first group, 46.8%; in the second, 70%; in controls of the first group, 1.4%; of the second, 0%. (355)

White mice, male and female, weight 18-20 g

- (2) 5 mg/mouse at various times before gamma-irr. Co<sup>60</sup> 900 r.
- (3) Marked protective effect when administered 10-120 min. before irr. (optimum-15 min.). (84)

White mice, male and female, weight 18-20 g,  
8-12 weeks old

- (2) S.C. or I.P. 5 mg/mouse 15 min. before gamma-irr. Co<sup>60</sup> 900 r (236 r/min).
- (3) Survival with S.C. administration, 23.3 ± 7.7%; with I.P., 30 ± 18.3%; all controls died. (85a)

Mice, 8 days old

- (2) I.P. 750 gamma or S.C. 375-750 gamma 5 min. before irr. 550 r.
- (3) Epilation absent in experimental animals. (711)

Mice

- (2) Preparation administered to animals irradiated in the state of hypoxia caused by cooling of the body to 0-10°.
- (3) Protective action of cystamine in conjunction with hypoxia was not different from the effect of only hypoxia, but was higher than the protective effect of cystamine only. (810)

White rats, male, weight 180-225 g

- (2) I.P. 150 mg/kg 30 min. before irr. 300 r.
- (3) Absolute protective effect 30%. (151)

Rats

- (2) I.P. 100 mg/kg 2, 10, 20, 30, and 45 min. before irr. 900 r.
- (3) Maximum protective effect (50% survival) when administered 10 min. before irr.; minimum effect (survival 10%) when administered 45 min. before irr. (388)

White rats, male, weight 150-200 g

- (2) Internally 150-900 mg/kg 1.5 hour before irr. 650 r.
- (3) Mortality in experimental and control groups was the same. (313)

White rats

- (2) Before irr.
- (3) Decrease of DNA of small lymphocytes caused by irr. absent in experimental animals. (96)

White rats

- (2) I.P. 100 mg/kg 20-30 min. before irr. 1000 r.
- (3) Changes in mitotic coefficient in thyroid gland expressed to lesser degree. (331)

Rats

- (2) I.P. 90-100 mg/kg 6-15 min. before irr. 700 r.
- (3) In tissues of spleen, thyroid gland, small intestine, and liver, a decrease in changes of degree of linkage between respiration and phosphorylation; changes in shifts in ATP and DNA contents. (75)

Rats

- (2) Before irr. with various doses.
- (3) Disorders of ascorbic acid metabolism in adrenals were expressed in the same degree in experimental and control animals. (240)

White rats, pregnant, (15th day of pregnancy)

- (2) I.P. 65 mg/kg 15-30 min. before irr. 300 r.
- (3) Still births were 28.49% less, and post-natal deaths, 47% less than in controls. (103)

Rabbits, weight 2-2.5 kg

- (2) I.P. 50 mg/kg 30 min. before irr. 1000 r.
- (3) Absolute protective effect 15%. (151)

Dogs

- (2) Before irr. 500 and 300 r.
- (3) Protected blood formation processes, and stimulated regeneration. (205)

Mice, rats, dogs

- (2) No entry.
- (3) (257). See also (81a, 331a, 356a, 387a, 438a, 647a).

## CYSTAMINE HYDROCHLORIDE

Yeasts *Saccharomyces vini*, Magri strain 139 B

- (2)  $10^2$  -  $10^5$  M 15-20 min. before irr. 30, 45, 60 kr (1000 r/min).
- (3) Concentration  $10^2$ - $10^4$  M protected against death with DRF from 1.2 to 1.7;  $10^5$  M concentration did not protect. (185)

White mice, male, weight 21-23 g

- (2) I.P. 3 mg/mouse 10-15 min. before irr. with pulse beam of protons with energy 660 Mev, average flux density  $10^8$ - $10^9$  protons/cm<sup>2</sup> per sec. 300-400 rad/min.
- (3) With 1472 rad, by 30th day after irr., 7 out of 10 experimental animals survived; in controls, with 1180 rad, all died. (556)

Mice

- (2) Internally 500 mg/kg 1 hour before gamma-irr. Co<sup>60</sup> 750 r (LD<sub>100</sub>).
- (3) Survival 20%. (257)

White rats, male, weight 170-210 g

- (2) Internally 200 and 300 mg/kg 1 hour before irr. 650 and 750 r.
- (3) Protective effect absent. (258)

Dogs, male and female, without lineage,  
weight 9.2-16.5 kg

(2) Internally 50 mg/kg 1 hour before irr. 350 r.

(3) Protective effect absent. (258)

CYSTEAMINE; merkamine, beta-mercaptoethylamine, MEA

Phage T 2

(2)  $1 \times 10^{-2}$  -  $8 \times 10^{-2}$  M/l in bouillon with irr. dose reaching  $2 \times 10^6$  rad.

(3) Protection against death with DRF up to 2.5. (635)

Phage T-1 and T-2

(2)  $10^{-4}$  -  $10^{-1}$  M in bouillon, buffer, or in  $H_2O$ ; irr. with various doses (500 kr/min) in  $N_2$  and  $O_2$ .

(3) Protection against death for T-1 with DRF up to 3.12; T-2 with DRF up to 3.31. Presence of  $O_2$  during irr. decreased the effectiveness of protection. (540)

Phages T1, T2, T4, T4Bo, T5, T7, P22, Fx174

(2) 0.2 M in 4% bouillon 5 min., subsequent dilution with bouillon to concentration  $5 \times 10^{-5}$  M, not showing protective action. Irr. with doses up to 300 kr in  $N_2$ .

(3) Protected against death with DRF from 2.4 to 3.6. (538)

Phage Fx174

(2) 0.15 M in bouillon before and after irr. up to 3 Mr (0.5 Mr/min).

(3) Protected against death with DRF=2.5 with administration before, but not after irr. (539)

Phage T2

(2) 0.01 M in the presence of 10 mM thiourea during beta-irr. up to 500 kr, 8 Mev, (30,000 rad/min) with bubbling through of  $O_2$  or  $N_2$ .

(3) Protected effectively against death in the presence of  $N_2$ . With bubbling of  $O_2$ , protective action almost completely removed. (541)

Phage T 2

(2) 0.01 and 0.15 M 10 min. before irr. 300 kr (500 kr/min) in  $O_2$  and in  $N_2$ .

(3) Protection with 0.01 M only when  $N_2$  present (DRF=1.6); with 0.15 M--protected in  $N_2$ , as well as in  $O_2$ . (536)

Spores Aspergillus terreus

(2) 0.1 M with irr.

(3) Protected against death with DRF=1.8. Decreased frequency of mutations occurring with non-lethal doses. (532)

Seeds of beans Vicia faba

- (2) Seeds irr. 3000 r (600 r/min) and after 41 hours moistened for 2 hours in the Crone solution containing 16.7 mg/ml.
- (3) Completely removed inhibition of mitosis. (587)

Germinating seeds of beans "Alaska Express"

- (2) 1:5000 during 2 hours before, and during irr. 200, 400, and 800 r.
- (3) Decreased growth inhibition. Application of preparation in controls caused some growth inhibition. (374)

Germinating seeds of cross-lettuce Lepidium sativum and beans Pisum sativum

- (2)  $10^{-5}$  -  $10^{-4}$  M during 4 hours before irr. 100-6400 r (510 r/min).
- (3) Did not affect growth inhibition and change in dry weight. (716)

Monocomplex of bacteria Escherichia coli and phage T 2

- (2) 10 mM during beta-irr. 8 Mev (30,000 rad-min) with doses up to 300 krad with bubbling through of  $O_2$  or  $N_2$ .
- (3) Did not protect either with  $O_2$  or with  $N_2$ . (541)

Bacteria Haemophilus influenzae

- (2) 100 mg/ml-30 mg/ml at 0°C. 15 min. before and during irr. with doses up to 90 kr (12 kr/min) in  $O_2$  (determination of survival), or with irr. 24 kr, in  $O_2$  (determination of DNA breakdown).
- (3) Better protection against death was shown by concentration of 3 mg/ml and higher. DRF of protection was approximately equal 3.5 which was higher than the protection shown by  $N_2$  (DRF=3). 25 mg/ml with bubbling  $O_2$  markedly protected against postradiation breakdown of DNA. DRF of protection equal 4-8. Absence of  $O_2$  showed similar protection. (757)

Monocomplex Escherichia coli B and T 2

- (2)  $8 \times 10^{-3}$  M in bouillon, before irr. up to  $2 \times 10^6$  rad (16 krad/min).
- (3) Early application (0-5 min. from the moment of formation) protected and the later application (8-10 min. from the moment of formation) did not. (635)

Bacteria Escherichia coli B

- (2)  $8 \times 10^{-2}$  M in bouillon before irr. up to  $2 \times 10^6$  rad (16 krad/min).
- (3) Did not protect bacterial capacity to produce phage T2. (635)

Bacteria Escherichia coli B and B/r

- (2) 0.02 - 0.04 M 15-20 min. before irr. 4.2-25.2 kr (1400 r/min) in  $N_2$  and  $H_2$ .



- (3) Protected against death E coli B with DRF=4.7, and E. coli B/r with DRF=6.2. With irr. only in N<sub>2</sub> or H<sub>2</sub>, DRF was respectively 3.0 and 3.1. (62)

Bacteria Escherichia coli B, B/r, and Bs

- (2) 0.0006-0.12 M in physiological solution at 0-1°C. 30 min. before irr. up to 40 kr in N<sub>2</sub>.
- (3) Optimum concentration 0.06 M protected against death: strain B/r with DRF=6.0; strain B with DRF=3.9 and 3.3; and strain Bs with DRF=2.6. Nitrogen protected corresponding strains with DRF=3.2, 2.4, 2.2, and 1.5. (430)

Bacteria Haemophilus influenzae

- (2) 1-3% before beta-irr. up to 3 Mrad, 1 Mev (0.10-1.6 Mrad/min) at temperatures lower than 10°C.
- (3) Protected DNA according to separate and variously combined marks of resistance to katomycin, streptomycin (depressed and not depressed), and erythromycin with DRF=3-5, which was higher than the protection given by N<sub>2</sub> (DRF=1.5-2.0). (758)

Bacteria Bact. cadaveris NCTC

- (2) 1% in buffer before irr. with doses up to 20,000 r.
- (3) Protected against death. (527)

Male cockroaches Periplaneta americana (L)

- (2) 0.8-0.08 mg per day during 13-22 days before, and 36 days after irr.; or 1-10 mg I.P. before irr. 10 krad.
- (3) Did not protect against death. (812)

Paramecium caudatum

- (2) In subtoxic concentration with irr. 10,000 r (460 r/min).
- (3) Markedly protected against inhibition of division. (143)

Infusoria Paramecium caudatum

- (2) 0.005-0.02 mg/ml 15 min. before irr. 100 kr (7200 r/min) at 1-3°C., in the air, and in the vacuum.
- (3) Did not protect against death. H<sub>2</sub>O<sub>2</sub> content, added to non-irradiated Paramecia, decreased only under very high concentrations - 1 mg/ml. (86)

Yeasts, haploid, aerobic, and fermenting strains

- (2) 0.14 M with irr. in aerobic and anaerobic conditions.
- (3) Protected against death with DRF=2.2 in aerobic as well as in anaerobic conditions. Protective effect of anoxia alone corresponded to DRF=1.8. (823)

Candida tropicalis

- (2) 0.005-0.04 M during irr. 12,500 rad beta-rays Sr<sup>90</sup>.
- (3) Marked protective effect detected only with maximum concentration. Survival increased 17.2%. (800)

Yeasts *Saccharomyces vini*

- (2)  $10^{-4}$  -  $10^{-7}$  M/ml during gamma-irr.  $\text{Co}^{60}$  5-100 kr.
- (3) Corresponding to concentrations, delayed death of dividing cells. (48)

Grasshoppers *Gesonula punctiformis*

- (2) 0.05 - ml  $25 \times 10^{-3}$  M in hematocele 30 min. before irr. 120 r (40 r/min) in air and in  $\text{N}_2$ .
- (3) Decreased frequency of formation of dicentric bridges in testes from 30.9 to 20.73% in air, and from 8.32 to 5.35% in nitrogen. Effectiveness of protection in air equaled 32.91%, in nitrogen--35.81%. The effectiveness of protection of anoxia--73.07%; and of anoxia in conjunction with cysteamine--82.68%. (714)

Tissue culture of fibroblasts and myoblasts of chicken and mice embryos

- (2) 1:50,000 - 1:200,000 in Tired solution 10 min. before irr. 400-750 r.
- (3) Did not protect; criteria: growth and mitotic activity. (778)

Tissue culture of intestine of chicken embryo

- (2) 4 hours in solution 1:800 before irr. 4.8 kr.
- (3) Prevented, or delayed necrosis in 50-80% of cases. (567)

Tissue culture of testes of chicken embryo

- (2) 6-8 hours in solution 1:800 before irr. 800 r.
- (3) In 50-80% of cases prevented or delayed necrosis. Did not protect with larger doses. (567)

Chicken embryos, 9-10 days old

- (2) 1:800 before irr. of intestines and ovaries of embryo 4800-64,000 r.
- (3) Necrosis of organs arrested in 50-80% of cases. (567)

Rhode Island chicken embryos

- (2) 1 ml into embryonal sac or 2.5 mg into extraembryonal cavity 1-240 min. before irr. 850-1000 (100 r/min).
- (3) Did not protect against death. (680)

"Russian White" chicken embryos

- (2) 0.5 mg 30 min. before irr. into yolk sack. 400 and 600 r (38 4/min).
- (3) The number of developed sclerotic papillae increased 20% with 400 r and 10% with 600 r. Papillae development curve did not change. (250)

Fibroblasts of mice, strain L

- (2)  $1.5 \times 10^{-3}$  M during 60 min. before irr. 580 r (70 r/min).
- (3) Did not protect against death. (771)

Ascites Erlich carcinoma

- (2) 3 mg/20 g before irr. in vivo, 1000 r for the tumor area.
- (3) Protected tumor. (811)

Cells of ascites sarcoma

- (2) 0.008 M at pH=7, 10-15 min. before irr. or 3 hours at 21°C. before irr. or at 4°C. after irr. in vitro 2 kr (1064 kr/min).
- (3) Tumor transplantability increased from 3 to 62%. Protection after irr. existed if the irr. suspension was kept at +4°C. (transplantability increased from 0 to 75%), but not at 21°C. (517)

Ascites Erlich carcinoma

- (2) With irr. in vitro 20 kr or I.P. with local irr. in vivo 5000 r.
- (3) Protected in vivo and vitro. Protection especially well marked in experiments in vitro, where the tumor transplantation was successful in almost 100% of cases. (573)

Crocker sarcoma

- (2) I.P. with local irr. in vivo 5000 r.
- (3) Did not protect; criterion: tumor weight. (573)

Cells of bone marrow of rats

- (2) I.P. 150 mg/kg before irr. 800 r.
- (3) Protected. Criterion: mitotic index. Maximum protective effect observed between 15-30th day. (440)

Thymocytes of rats

- (2)  $6.5 \times 10^{-4}$  M 20 min. before, and 10 min. after irr. in vitro 500 rad.
- (3) Survival increased from 57 to 80% with administration before, but not after, irr. (494)

Megakaryocytes of white rats

- (2) I.P. 150 mg/kg before irr. 500 r.
- (3) Protected against intensification of  $\text{Fe}^{59}$  incorporation into nucleus and into cytoplasm. (397)

Pig erythrocytes

- (2)  $3 \times 10^{-3}$  M during irr. 66 kr (1100 r/min).
- (3) Decreased hemolysis. (473)

Human erythrocytes

- (2) 0.01 M in physiological solution before gamma-irr.  $\text{Co}^{60}$  45, 90, and 130 kr (2500 r/min), or before the action of oxidized oleic acid (OOA) in concentrations  $6 \times 10^{-3}$ ,  $12 \times 10^{-3}$ , and  $25 \times 10^{-3}$  mg/ml.

- (3) Almost complete protection against hemolytic effect of radiation, and partial protection against hemolytic effect of OOA (salt-acid erythrogram method). (139)

Human and pig erythrocytes

- (2)  $10^{-2}$  -  $3 \times 10^{-4}$  M in neutral solution, before or after irr. (1100 r/min).
- (3) Protected against hemolysis when added before, but not after, irr. Maximum protection shown by  $3 \times 10^{-3}$  M concentration; higher concentration ( $3 \times 10^{-2}$  M) intensified hemolysis. (471)

Human kidney cells (tissue culture)

- (2) 4 and 16 mM 30 min. before irr. in air and in  $N_2$ , with doses up to 3500 rad.
- (3) Protected against death in the air with DRF=1.9 with smaller concentration, and with DRF=3.3 with larger concentration. In  $N_2$  corresponding values of DRF--3, 0 and 3.95, which is higher than protection of  $N_2$  alone (DRF=2.6). (792)

Human kidney cells (tissue culture)

- (2) 4 mM 30-45 min. before irr. with doses up to 1500 rad (344 r/min).
- (3) Protected against death with DRF=1.9. (803)

Human kidney cells (tissue culture)

- (2) 2-64 mM 10-30 min. before and after irr. with doses up to 60,000 rad (200 r/min).
- (3) Protected against death with DRF up to 3.8 with administration before, but not after, irr. Optimum concentration--32 mM. (802)

Frogs

- (2) 80 mg/kg before or after irr. 1500 r. Frogs kept at temperatures  $+21^{\circ}\text{C}$ ., and  $+5^{\circ}\text{C}$ .
- (3) Protective effect absent. (518)

White mice, male and female, weight 18-20 g

- (2) 3 mg/mouse at various times before gamma-irr.  $\text{Co}^{60}$  900 r.
- (3) Marked protective effect with administration 10-90 min. before irr. (84)

White mice, male and female, weight 18-20 g, 8-12 weeks old

- (2) S.C. 3 mg/mouse 15, 30, 60, 120, 180 min. before gamma-irr.  $\text{Co}^{60}$  900 r (378 r/min).
- (3) Maximum increase in survival with administration 15 min. before irr. Spleen and liver oxygen content without substantial changes. (82)

Mice, male, Swiss line, weight 20 g

- (2) I.P. 0.135 g/kg 15 min. before irr. 600 r.
- (3) Survival 36%; all controls died. (412)

Mice

- (2) Before irr. with roentgen or gamma-rays Co<sup>60</sup>.
- (3) Protective effect less with gamma-irr. than with roentgen rays. (441)

White mice, weight 16-22 g

- (2) I.P. 150 g/kg immediately before irr. 700 r.
- (3) Survival 42.2%; all controls died. (125)

Mice, female

- (2) I.P. 170 mg/kg 30 min. before irr. 1300 and 1400 r.
- (3) Survival corresponding to doses of irr. 5 and 0%. (370)

Mice, male, CF<sub>1</sub> line, 2 months old

- (2) I.P. 3 mg/mouse 5 min. before or after irr.
- (3) Survival 67%; all controls died. (727)

Mice

- (2) 30, 15 min. before, and immediately before irr., or after irr., 600-1200 r.
- (3) With dose 800 r, 8 mice survived out of 10; all controls died. With administration 30 min. before irr. or after irr. the effect absent. (670)

White mice, weight 18-20 g

- (2) S.C. 3 mg/mouse 5-10 min. before gamma-irr. Co<sup>60</sup> 1050, 1150, and 1300 r.
- (3) Survival, corresponding to doses, 19, 2.5, and 0%; all controls died. (289)

Mice, female, Bagg-Swiss line, weight 20-25 g

- (2) I.P. 75 mg/kg 15 min. before irr. 800 r.
- (3) Survival by 30th day after irr. 30%; all controls died by 21st day after irr. (725)

Mice, weight 16-22 g

- (2) I.P. 3 mg/kg 10 min. before irr. 725 r.
- (3) Survival by 30th day after irr. 70%; in controls--1%. (555)

Mice

- (2) I.P. 3 mg 2-3 min. before gamma-irr. Co<sup>60</sup> 650 r, or before administration of radioactive cerium 5 mkgurie/g.

- (3) With external irradiation, weight loss of liver and spleen expressed less than in controls. Formation of hemolytic substances in tissues of experimental animals was not observed. With internal irr. the protective action of MEA was absent. (329)

Mice, R.A.P. line

- (2) 5 mg/20 g before gamma-irr.  $Co^{60}$  (900 r).  
 (3) Survival by 30th day after irr. 38%; all controls died. (416)

Mice, CF<sub>1</sub> female

- (2) 400 mg/kg before irr. of gastrointestinal tract 1240 r.  
 (3) In controls LD<sub>50</sub>-1240 r; in the experimental group LD<sub>50</sub> changed, DRF=1.8. (600)

White mice, male and female, weight 18-23 g

- (2) I.P. 150 mg/kg 5-10 min. before irr. with roentgen rays 800 r; gamma-rays  $Co^{60}$  850 r; protons with energy 660 Mev 1300-1550 rad.  
 (3) Survival in the first group 10%; in the second--32%; in the third--30-55%; all controls died. (355)

White mice, male and female, weight 18-22 g

- (2) S.C. 3 mg/mouse 5 min. before gamma-irr. 1100 r.  
 (3) By 30th day after irr. 42 mice survived out of 240; all controls (320 mice) died. (291)

Mice

- (2) I.P. 30 mM 7-10 min. before irr. 800 r and 1100 r.  
 (3) Survival with irr. 800 r - 50-65%; with 1100 r--all died; all controls died from 650 r dose. (806)

White mice, weight 18-22 g

- (2) I.P. 150 or 1000 mg/kg before irr. 700 r.  
 (3) Survival 52 and 35%; all controls died. (155)

White mice

- (2) I.P. 150, 100, and 75 mg/kg before irr. 700 r.  
 (3) Survival 45, 30, and 0% respectively; all controls died. (156)

Mice, male, weight 18-20 g

- (2) I.P. 100 mg/kg 10-15 min. before irr.; 10-15 min. after irr. 700-800 r (36.6 r/min).  
 (3) Survival 27%; in controls--7%. With administration after irr. protective effect absent. (131)

Rabbits

- (2) I.V. 100 mg/kg 10-15 min. before irr.; 10-15 min. after irr. 1000 r.

- (3) Number of leukocytes decreased 20-40%; in controls--70-80%.  
With administration after irr., protective effect absent.  
(131)

#### Mice

- (2) I.P. 150 mg/kg 15 min. before irr. 700 r.  
(3) Survival 42.2%; all controls died. (270)

#### Pregnant mice

- (2) Before irr. 300-700 r.  
(3) Increased survival and normalized growth processes in the offspring. (726)

#### White mice

- (2) 3 mg/mouse before irr. 3-5 min. before irr. tourniquet applied to the lower third of the hip and removed immediately after irr. 750 r.  
(3) Survival 53-75%; with administration of mercamine alone (without tourniquet application), 3-65%; with application of tourniquet alone, 3-50%; in controls, 0%. (109)  
See also (100a, 329a, 411, 511, 576, 583, 601, 678, 647a, 826).

#### Rats, male, weight 150-175 g

- (2) I.P. 200 mg/kg 15 min. before irr. 450 r; 1 hour after irr. I.P. administration of 30 mkeurie  $I^{131}$ .  
(3) Investigations 4, 24, and 48 hours after irr. showed decreased  $I^{131}$  intake by thyroid gland. (794)

#### Rats

- (2) Before local irr. of the head 1000-2000 r.  
(3) Late mortality (observed during 6 months) was the same in control and experimental animals. (631)

#### Rats, female

- (2) 30 min. before local irr. of ovaries.  
(3) Ovarian changes expressed less than in controls. (632)

#### Rats

- (2) Before irr. 600 and 800-850 r.  
(3) Considerable increase in survival. (712)

#### Rats, male

- (2) 150 mg/kg during reheating of the body after irr. during hypothermia (body temperature 0-5°C).  
(3) On the 15th day after administration of the preparation, lymphocyte content 72%; in controls (non-protected), 51%. (563)

- (2) I.P. 100 mg/kg immediately before irr. 800 r.
- (3) Lesser decrease in the bactericidal activity of blood serum. (335)

Rats, adult females, 8 and 17 days old

- (2) Before irr. 200 r.
- (3) Sterility of 8 day old females the same as in controls. Temporary protection against sterility in 50% of 17 day old females; reproductive cycle of adult rats was longer in experimental rats than in controls. (623)

White rats

- (2) I.P. 100-200 mg/kg 8-10 min. before gamma-irr. Co<sup>60</sup> 750 r.
- (3) Survival 13-23%; in controls, 0%. (256)

White rats, male, weight 180-200 g

- (2) Before general and local irr. 300-600 r.
- (3) Lesser injury to testicles. (324)

Rats

- (2) 23 mg 3-15 min. before irr. 600 r.
- (3) Radioresistance of lymphocytes increased three times. (226)

Rats

- (2) I.P. before irr.
- (3) Lesser changes in blood protein fractions. (395)

White rats, weight 150-200 g

- (2) I.P. 100 mg/kg before irr. 700 r.
- (3) Survival 20%; in controls, 6.6%. (155)

Rats, weight 200-220 g

- (2) 150, 200 mg/kg 5 min. before irr. 650 r (32.5 r/min).
- (3) Survival 30 and 50%; in controls--5%. (267)

Rats

- (2) I.P. 90-100 mg/kg 6-15 min. before irr. 700 r.
- (3) Lesser disorders of conjugated phosphorylation. (75)

White rats, pregnant, (9th day of pregnancy)

- (2) I.P. 75 mg/kg 15 min. before irr. 200 and 300 r.
- (3) With irr. 200 r, number of intrauterine deaths in the experimental group 20.7% less than in controls. With 400 r (sic) protection absent. (54)

White rats, pregnant (15th day of pregnancy)

- (2) I.P. 75 mg/kg 15 min. before irr. 300 r.



- (3) Number of intrauterine deaths 42.3% less than in controls (54)

Rats, pregnant

- (2) Before irr. 200 and 300 r on the 9th and 15th day of pregnancy.
- (3) Protective effect (increased the total of new-born and viable rats) only with 200 r. (146) See also (13, 413, 413a, 442, 518a, 746a, 797).

Guinea pigs

- (2) No entry.
- (3) (158a).

Golden hamsters

- (2) No entry.
- (3) (215a).

Rabbits

- (2) I.P. 100 mg/kg before irr. 1000-1200 r.
- (3) Lesser changes in EEG. (304)

Rabbits, sympathectomized

- (2) I.P. 100 mg/kg 30 min. before irr. 1000 r 10-25, and 30-60 days after sympathectomy; controls--received preparation but not sympathectomized.
- (3) Corresponding to periods of irr: after sympathectomy 4 and 8 animals survived out of 11; in controls 7 survived out of 11. (18)

Dogs

- (2) I.P. 100 mg/kg 10-15 min. before irr. 500 r.
- (3) By 60th day after irr. all 5 dogs had survived; out of 4 controls, one survived. (213)

Dogs, male, weight 9-21 kg

- (2) S.C. 100 mg/kg before irr. 800 r.
- (3) Protective effect absent. (267)

Monkeys

- (2) Before irr. 374 r.
- (3) By 30th day after irr., 3 monkeys died out of 5 controls. All experimental monkeys survived. Bacteremia, leukemia, and hemorrhagic syndrome weakly expressed in experimental animals. (231) See also (2, 105a, 130a, 290, 490, 599, 750).

CYSTEAMINE BROMHYDRATE

Bacteria Escherichia coli B and B/r

- (2) 0.02 M 1 hour before irr. 3.75-22.5 kr (1250 r/min) in air,

1% nitrogen oxide (NO), or N<sub>2</sub>.

- (3) E. coli B/r protected against death in the presence of air, and NO, with DRF=3, and in the presence of N<sub>2</sub>, with DRF=6.5. E. coli B in air, and in NO protected against death with DRF=2.2. (63)

White mice

- (2) I.P. 175 g mg/kg 10-15 min. before irr. 700 r.  
(3) Survival 40%; all controls died. (112)

White mice

- (2) I.P. 150 and 175 mg/kg 10-15 min. before irr. 700 r.  
(3) Survival 50 and 60%; all controls died. (154)

CYSTEAMINE BENZOATE

Paramecium caudatum

- (2) In subtoxic concentration with irr. 10,000 r (460 r/min).  
(3) Protected against inhibition of division tempo. (143)

CYSTEAMINE PARAAMINOBENZOATE

Paramecium caudatum

- (2) In subtoxic concentration with irr. 10,000 r (460 r/min).  
(3) Protected against inhibition of division tempo. (143)

CYSTEAMINE SALICYLATE

Paramecium caudatum

- (2) In subtoxic concentration with irr. 10,000 r (460 r/min).  
(3) Protected against inhibition of division tempo. (143)

CYSTEAMINE HYDROCHLORIDE

Bacteria Escherichia coli 0111

- (2) 10<sup>-2</sup> and 10<sup>-3</sup> M before irr. 15 and 40 kr.  
(3) Survival increased: from 50% to 99%; and from 0% to 67%. (519)

Yeasts Saccharomyces vini, Megri strain 139

- (2) 10<sup>-1</sup> - 10<sup>-5</sup> M 15-20 min before irr. 30, 45, and 65 kr (1000 r/min).  
(3) Protected against death with 10<sup>-1</sup> M survival close to 100%; 10<sup>-2</sup> and 10<sup>-3</sup> protected with DRF=2.2 and 1.2 respectively. 10<sup>-4</sup> did not protect. (185)

Cells of tissue culture of human epidermal carcinoma

- (2) 5-200 mg/ml in saline medium SRJ-8 before gamma-irr. Co<sup>60</sup> 100-10,000 r.

- (3) With doses up to 1000 r, protected corresponding to concentrations; criterion: effective clone-formation. (560)

White mice, male, weight 21-23 g

- (2) I.P. 3 mg 10-15 min. before irr. with pulse beam of protons with energy 660 Mev, average flux density  $10^8 - 10^9$  protons/cm<sup>2</sup> per second (300-400 r/min).
- (3) With dose 1050 rad by 30th day after irr., 9 mice survived out of 15; with dose 1279 rad, 3 survived out of 10; in controls with dose 1070 rad, 3 mice survived out of 15; and with dose 1180 rad, all died. (356)

White mice, male, weight 18-22 g

- (2) I.P. 150 mg/kg 30 min. before irr. 700 r.

- (3) Absolute protective effect 80%. (151)

Mice

- (2) 0.15 mg/g 10-15 min. before single gamma-irr. Co<sup>60</sup> 800 r, or before 4 irradiations, 200 r each, with 7 day intervals. Preparation administered before each dose of irr.

- (3) Mortality in the first group,  $27 \pm 1.7\%$ ; in the second,  $45 \pm 1.5\%$ ; and in controls,  $58 \pm 1.4\%$ . (7a)

Mice, male, CBA line, weight 20 g

- (2) I.P. 200 mg/kg 15 min. before irr. 1092 r.

- (3) Survival by 30th day after irr., 95%; in controls, 5%. (508)

Mice

- (2) I.P. 0.25 g/kg 15 min. before irr. 1000 r.

- (3) Insignificant protective effect. (528)

White mice, female, weight 17 g

- (2) S.C. 150 mg/kg 10 min. before irr.  $780 \pm 26$  r (70 r/min).

- (3) Survival 56.6%; in controls, 6.6%. (178)

White rats, male, weight 180-225 g

- (2) I.P. 100 mg/kg 30 min. before irr. 800 r.

- (3) Absolute protective effect 56%. (151)

Rats

- (2) I.M. 150 mg/kg 30 min. before irr. 1200 r.

- (3) 1/3 of experimental animals survived; all controls died. (284)

Rats, male, weight 200-250 g

- (2) I.P. 150 mg/kg 10 min. before irr. 750 r (7.5 r/sec).

- (3) Decrease in urinary secretion of dyshepolozhitelnyk compounds. (268)

White rats, male, weight 170-210 g

- (2) I.P. 100-110 and 150 mg/kg 8-10 min. before gamma-irr. Co<sup>60</sup> 750 r.
- (3) With dose 100-110 mg/kg by 30th day after irr., 8 rats survived out of 40; with dose 150 mg/kg, 31 rats survived out of 59; in controls, out of 100 rats one survived. (258)

Rats

- (2) I.P. 150 mg/kg 8-10 min. before gamma-irr. Co<sup>60</sup> 650 r.
- (3) Survival 52% higher than in controls. (257)

Rats, male, weight 180-230 g

- (2) I.P. 100 mg/kg 5-10 min. before irr. 720 r.
- (3) Survival by 30th day after irr., 52%; in controls, 4%. (217)

Rats, male, weight 180-210 g

- (2) I.P. 15 mg/kg 3-5 min. before irr. 650 r.
- (3) Decreased depolymerization of liver DNA. (132)

Dogs, male and female, without lineage, weight 9.2-16.5 kg

- (2) I.V. 75-110 mg/kg 8-10 min. before gamma-irr. Co<sup>60</sup> 400 r.
- (3) With dose 75 mg/kg, 2 dogs survived out of 4; with dose 110 mg/kg, 7 dogs survived out of 9; in controls, all 13 dogs died. (258)

Dogs, male, weight 14-16 kg

- (2) I.V. 75 mg/kg 10 min. before irr. 600 r.
- (3) Absolute protective effect 20%. (151)

Dogs

- (2) I.V. 75-110 mg/kg 8-10 min. before gamma-irr. 400 r Co<sup>60</sup> (LD<sub>100</sub>).
- (3) Out of 13 dogs, 9 survived. (257)

## CYSTEINE; hormodin

Phage T 2

- (2) 2% before irr. 30,000-300,000 r (60,000 r/min).
- (3) Protected against death. Survival with 30,000 r, 3%; in controls, 0.001%. (608)

Phage T 1 and T 2

- (2) 10<sup>-4</sup> - 10<sup>-7</sup> (sic) M in bouillon before irr. with various doses (500 kr/min) in N<sub>2</sub>.
- (3) Protection against death: T 1 with DRF up to 2.08; T 2 with DRF up to 1.52. Protection of T 1 retained, if held 1 min in 10<sup>-4</sup> molar solution before irr. diluted 10,000 times. (540)

Phage T 2

- (2)  $10^{-2}$  M in bouillon.
- (3) Protected against death. (635)

Phage T 4 and T 4 Bo<sup>F</sup>

- (2) 0.5-molar solution in 4% bouillon Difco 5 min. with subsequent dilution to  $5 \times 10^{-5}$  M concentration demonstrating no protection. Irr. with doses up to 300 kr with roentgen or gamma-rays Co<sup>60</sup> in N<sub>2</sub>.
- (3) Phage T 4 protected against death forming a complex with SH-group substance; did not protect mutant T 4 Bo<sup>F</sup> and the above complex not formed. (539)

Seeds Arabidopsis Thaliana and Lepidium sativum

- (2) 2-hour moistening of seeds in  $10^{-2}$  molar solution, dried to initial weight and irr. 400,000 r (2700 r/min).
- (3) Did not protect against inhibition of germination. (716)

Barley Seeds

- (2) 24-hour moistening in 2.5% solution before gamma-irr. 200 and 400 r.
- (3) Decreased number of pathological mitoses. Decreased inhibition of mitosis. (676)

Corneal epithelium of salamander (Salamandra maculosa)

- (2) 0.02 ml 5% solution administered to animals before irr. in vivo 250 and 500 r (40 r/min).
- (3) Decreased somewhat inhibition of mitosis. Decreased number of pathological mitoses. (676)

Rootlets of barley, Hordeum vulgare

- (2) During irr. 250 and 500 r with roentgen rays, or 200 and 400 r with beta-rays Ra.
- (3) Protected against inhibition of mitosis and against chromosome aberrations. (675)

Tadpoles Urodela

- (2) During irr. 250 and 500 r.
- (3) Protected against inhibition of mitosis and decreased, approximately 30%, the number of pathological mitoses. (675)

Germinating seeds of beans Pisum sativum

- (2) 0.001-0.1 M during 2-8 hours before and after roentgen, or gamma-irr. Co<sup>60</sup> 700 r.
- (3) With administration before, but not after, irr., decreased inhibition of growth and mitotic activity; concentration 0.1 M with 570 r decreased number of cells with abnormal anaphases. (181)

Seeds of beans *Vicia faba*

- (2) Moistening of irr. seeds in 2.5% solution during 2 hours.
- (3) Decreased inhibition of mitosis, and of root growth. (587)

Rootlets of beans *Vicia faba*

- (2) No entry.
- (3) (621).

Bacteria *Escherichia coli*

- (2)  $10^{-3}$  M in physiological solution, or bouillon, during irr. with various doses (36 r/min).
- (3) Protected diluted bacterial suspensions in physiological solutions against death. Presence of bouillon nullified protective effect. (389)

Bacteria *Escherichia coli* B

- (2)  $10^{-3}$  M during irr. 0.5-2 kr (36 r/min).
- (3) Protected against death. The effectiveness of protection did not depend for the most part on the concentration of bacterial suspension  $10^{-4}$  -  $10^{-10}$  kl/ml. (390)

Bacteria *Pseudomonas* sp.

- (2) 0.03-0.3 M during 20 min. before irr. in  $N_2$ .
- (3) Protected against death with DRF up to 1.8. (402)

Bacteria *Escherichia coli* B/r

- (2) 0.15 M before irr. 10-60 krad, 8 Mev electrons, 27 and 5.2 Mev alpha-particles.
- (3) Protected against death at least up to doses 24 krad. (362)

*Drosophila* sp.

- (2) 0.05-0.1 ml I.P. 5-10 min. before irr. 3.6 kr (280 r/min).
- (3) Did not protect against formation of recessive sex-linked lethal mutations. (531)

Yeasts *Saccharomyces vini*

- (2)  $10^{-4}$  -  $10^{-7}$  M/ml during gamma-irr.  $Co^{60}$  5-100 kr.
- (3) Corresponding to concentrations, delayed death of dividing cells. (50)

*Candida* Berkhout

- (2) 0.02 M in culture medium 48 hours before irr. with roentgen or gamma-rays.
- (3) Protected against death 24 times better than thiourea. (801)

Yeasts *Saccharomyces vini*, Megri strain 139 B

- (2)  $10^{-4}$  -  $10^{-8}$  M/ml at various times (within 2 hours) before and during gamma-irr., or only before gamma-irr.  $Co^{60}$  10,000-

100,000 r (1445 r/min). In another experiment cystein added to agar in which the irr. yeasts were cultivated.

- (3) Decreased early and late inhibition of cellular division. In the concentration  $10^{-5}$  M/ml, showed therapeutic effect. (49)

Habrobracon sp.

- (2) Females were fed 5% solution before irr. 2500 r (2500 r/min); or two doses, 2500 r each, with 4 hour interval, during which they were incubated at 30°C.
- (3) Protected according to criteria of egg laying and hatching in the period between 3-12th, but not between 1-3rd, and 12-20th day after irr., had no effect on the length of life. (495)

Eggs of triton (Triton alpestris)

- (2) 0.01% 30 min. before and during irr. 100 r.
- (3) Did not protect against death. (730)

Bone marrow cells of mice

(101 x C<sub>3</sub>H)F<sub>1</sub>

- (2)  $1.30 \times 10^{-2}$  M 15 min. before irr. in vitro 800 r (160 r/min). 0.5 ml of irr. suspension administered I.V. to mice, before irr. with 900 r, (LD<sub>90</sub>/30).
- (3) Protected against death: 100% of mice survived. (743)

Bone marrow cells of mice, C<sub>57</sub> BL/R1j

- (2) 4 mM 15 min. before and during irr. in vitro 300 or 400 r (51 r/min).
- (3) Protected against death with DRF=1.7 with 300 r, and 1.8 with 400 r. (745)

Sections of undifferentiated carcinoma of mice

- (2) 0.008 M in physiological solution (pH=7) 20 min. before irr. in vitro 1000-4000 r (1030 r/min).
- (3) Increased tumor transplantability (especially pronounced with 3000 r - 39%) and decreased the length of latent implantation period. Promoted tumor growth. (503)

Sections of undifferentiated carcinoma of mice

- (2) 1.25 mg/ml in physiological solution 20 min. before irr. in vitro 4000 r (130 r/min).
- (3) Increased implantation from 0 to 58%. (502)

Ascites Erlich carcinoma

- (2) During irr. 15-200 kr (1412 r/min).
- (3) Protection with doses up to 100 kr; morphological criterion. (529)

Mice ascites carcinoma

- (2) During irr. in vitro 10,000 and 15,000 r.
- (3) Protected against destructive changes. (380)

Cells of Ascites Erlich carcinoma

- (2) 0.01 M in Hank's solution containing 1.5% glycerine, 5-7 min. before irr., in vitro, with doses from 2 to 6 kr at 20°, -78.4°, and -192°C.
- (3) Protected against death at all temperatures. Better effect of protection obtained with -78.4°C and 4 kr. (452)

Bone marrow cells of mice

- (2) 0.01 M in Hank's solution containing 1.5% glycerine, 5-7 min. before irr. in vitro at -78.4°C., with doses 500-4000 kr.
- (3) Protected against death. Criterion of survival was the weight of spleen of mice irr. with 600 r and receiving injection of bone marrow cell suspension. (452)

Cells of ascites Yoshida sarcoma

- (2) 0.008 M at pH=7 10-15 min. before, or 3 hours after irr. 2 kr at 21° or 4°C (1064 r/min).
- (3) Tumor transplantability increased from 3 to 62%. Protection after irr. present if suspension kept at +4°C., but not at 21°C. Tumor transplantability increased from 0 to 75%. (517)

Beef sperm

- (2) 2 mg/ml in phosphate buffer 48 hours after irr. 10,000 or 20,000 r (1060 r/min). Sperm irr. and kept at +4°C, then heated up to +15°C at the moment of addition of the preparation.
- (3) Protected against loss of motility. With 10,000 r, quota of non-motile spermatozooids decreased from 58 to 31%; with 20,000, from 66 to 40%. (735)

Human and pig erythrocytes

- (2)  $3 \times 10^{-5}$  -  $3 \times 10^{-2}$  M in neutral solution before or after irr. (1100 r/min) in air, or in nitrogen.
- (3) Protected against hemolysis when added before, but not after, irr. in the presence, and in the absence of O<sub>2</sub>. Concentration  $3 \times 10^{-3}$  M showed better protection;  $3 \times 10^{-5}$  M did not protect; and  $3 \times 10^{-2}$  M intensified hemolysis. (471)

Human and pig erythrocytes

- (2)  $3 \times 10^{-3}$  M before irr. 66,000 r (1100 r/min).
- (3) Protected against hemolysis, against "swelling," against intensification of K and Na metabolism. (470)

Human erythrocytes

- (2)  $3 \times 10^{-5}$  -  $3 \times 10^{-2}$  M during irr. lasting 30 min.



- (3) Corresponding to concentrations up to  $3 \times 10^{-3}$  M, protected with DRF up to 3.0; with  $3 \times 10^{-2}$  M, intensified hemolysis. Degree of hemolysis determined by K and Na ions content. (467)

Human erythrocytes

- (2)  $3 \times 10^{-4}$  -  $3 \times 10^{-2}$  M in phosphate buffer before or after 60 min. long irr.
- (3) Protected against hemolysis with administration before irr., and sensitized when added after irr; maximum protection shown by  $3 \times 10^{-3}$  M concentration. (Swelling decreased 5 times). Concentration  $3 \times 10^{-2}$  M intensified hemolysis when added before irr. (468)

Human uterine fibroblasts U 12

- (2) 8 min. before irr. 200 and 900 r in air,  $O_2$ , and  $N_2$ .
- (3) Protected against death with DRF=4.5. Bubbling through of  $O_2$  nullified protection, and  $N_2$  did not improve protection. (729)

Human kidney cells (tissue culture)

- (2) 4-128 mM 10-30 min. before and after irr. with doses up to 6000 rad (200 r/min).
- (3) Protected against death with DRF up to 3.9 with administration before, but not after irr. (802)

Cells of human epidermal carcinoma (tissue culture)

- (2) 5-200 mkg/ml in synthetic saline medium SRJ-8 before gamma-irr.  $Co^{60}$  100-10,000 r.
- (3) Protected corresponding to concentrations; criterion: the effectiveness of clone-formation with doses up to 1000 r. (560)

Frogs, Rana esculenta

- (2) 80 mg/kg before, or after irr. 1500 r. Frogs kept at  $+21$  and  $+5^\circ C$ .
- (3) Protective effect absent. (518)

Mice, female,  $CF_1$  line

- (2) I.V. 1200 mg/kg 5-15 min. before gamma-irr.  $Co^{60}$  (961-1054 r) or irr. with fast neutrons 197-252 fer.
- (3) Lethal dose with gamma-irr. decreased 14.9%; with irr. with neutrons--7.2%. (691)

Mice, female,  $CF_1$  line, weight 19-25 g

- (2) I.V. 300-1200 mg/kg before irr. 400-1000 r. Administration of the preparation and the irr. conducted fractionally, in two doses.
- (3) Protective action of cysteine injections was additive. (692)

Mice, female, strain H

- (2) I.P. 15 mg immediately before gamma-irr.  $Co^{60}$  1000 r

(38-46 r/min).

- (3) Mortality at 5.5, 7.5, and 10 days, 58.3, 83.3, and 91.7% respectively; all controls died in 7.5 days. (179)

Mice, male and female, strain H, weight 20 g

- (2) I.P. 25 mg 5-15 min. before gamma-irr. Co<sup>60</sup> 700 r (50 r/min).
- (3) Mortality by 30th day after irr., 66.7%, in controls, 100%. (181)

Mice, male, strain X, weight 20 g

- (2) 300 mg/kg 5-15 min. before gamma-irr. Co<sup>60</sup> 600 and 1000 r.
- (3) Mortality by 30th day after irr., 23.5 and 35.7%; in controls, 70.6 and 100%. (181)

Mice, male

- (2) Immediately after irr. 550 r (18.6 r/min).
- (3) Had no effect on appearance of DNA and RNA changes, but accelerated the disappearance of these changes. (584)

Mice, male

- (2) No entry.
- (3) Preparation did not protect against damage to genital cells caused by radiation. However, the regeneration in testicles of "protected" mice was more intensive than in controls. (677)

White mice, male and female, weight 18-20 g

- (2) 20 mg/mouse at various times before gamma-irr. Co<sup>60</sup> 900 r.
- (3) Marked protective effect with administration 10-120 min. before irr. (84)

Mice

- (2) 1 mg/g before irr. 500 r.
- (3) Antiradiation effect observed in bone marrow. Criteria: mitotic index, chromosome aberrations. (558)

Mice, male

- (2) No entry.
- (3) Administration of preparation before irr. only partially prevented sterilization of animals. (677)

Mice

- (2) I.P. 2.5 mg 30 min. before irr. 500-600 r.
- (3) Weakened development of infectious complications. (666)

Rats

- (2) I.V. 5 ml 5% solution before irr. 500 r.
- (3) More rapid normalization of blood formation in bone marrow. (510)

Rats

- (2) I.V. 45 mg 3 min. before irr. 600 r.
- (3) Antiradiation effect expressed weakly. Criterion: radiosensitivity of lymphocytes. (226)

White rats, weight 200-250 g

- (2) I.V., S.C., or I.P. 100 and 900 mg/kg 30-40 min. before irr. 450-650 r (15 r/min).
- (3) With absolute lethal dose cystein prolonged life; with smaller doses of radiation, increased survival. (181)

Rats

- (2) I.P. 100 mg 5-10 min. before irr. 800 r.
- (3) Content of peroxides in liver extracts of experimental and control animals on the 10th day after irr. was practically the same. (184)

Rats

- (2) 1000 mg/kg 20 min. before gamma-irr. Co<sup>60</sup> 800 r.
- (3) Frequency, dependent ohmic resistance curve of the liver tissue, approached the norm. (196)

Rats

- (2) I.P. 1000 mg/kg 5-15 min. before irr. 400 r.
- (3) Changes in the activity of spleen ATP-ase and of small intestine cholinesterase expressed to a lesser degree. (522)

Rats

- (2) 1.2 g/kg 10 min. before, or 1.5-2 hours after, gamma-irr. 800 r.
- (3) Survival with administration before irr., 33.3%; all controls died. Administration of preparation after irr. ineffective. (201)

White rats, male

- (2) I.P. 50 mg/100 g before gamma-irr. 750 r.
- (3) Protective effect absent. (354)

Rats, Wistar line

- (2) I.P. before gamma-irr. Co<sup>60</sup> 5000, 6000, and 7000 r.
- (3) Weight changes and degree of leukopenia in experimental group less than in controls. (568)

Rats

- (2) I.P. 100 mg/rat 5 min. before irr. 800 r.
- (3) Increased resistance of erythrocytes. (59) See also (529a, 714a).

Rats with Walker 256 carcinoma

- (2) I.V. 950 mg/kg before irr. 800 r.
- (3) Protected rats against death, and tumors against growth inhibition during the first 10 days after irr. (756)

Glis glis

- (2) 21 days after irr. 800 r during hibernation, immediately before return to normal environmental temperature.
- (3) Mortality absent; normalization of absorption of  $P_{32}$  in DNA. (591)

Rabbits

- (2) I.M. before gamma-irr.  $Co^{60}$ .
- (3) Inhibited or prevented cataract formation. (754)

Rabbits

- (2) S.C. 5 ml 8% solution 10-12 days after gamma-irr.  $Co^{60}$  1000-1500 r.
- (3) Pathohistological changes in the iris and cornea of experimental and control animals were approximately the same. (51)

Dogs

- (2) After irr. 440 and 800 r.
- (3) Therapeutic effect absent. (199) See also (14, 194).

Monkeys Macaca mulatta

- (2) No entry.
- (3) (697). See also (36, 673).

## STEINE HYDROCHLORIDE

Bacteria Escherichia coli B

- (2) 0.02 M 15-20 min. before irr. 4.2-25.2 kr (1400 r/min) in  $N_2$ .
- (3) Protected against death with DRF=3.4. Administration of  $N_2$  only resulted in DRF=3.0. (62)

Bacteria Escherichia coli 0111

- (2)  $10^{-2}$  and  $10^{-3}$  M before irr. 15 and 40 kr.
- (3) Survival increased from 50 to 75%; and from 0 to 20%. (519)

Mice

- (2) 1.2 g/kg in 12.5% in solution 5-10 min. before gamma-irr. (961-1054 r) or before irr. with fast neutrons 197-252 fer.
- (3) Decreased dose effectiveness with gamma-irr. 14.4%; with neutron irr., 7.2%. (691)

White mice, male and female, weight 18-22 g,  
8-12 weeks old

- (2) S.C. 20 mg/mouse 15, 30, 60, 120 min. before gamma-irr. Co<sup>60</sup> 900 r (378 r/min).
- (3) Antiradiation effect not connected with changes in oxygen content of spleen and liver. (82)

White rats

- (2) 1 g/kg before fractional irr. (6 sittings, 200 r each).
- (3) No differences noted between controls and experimental animals. (689) See also (692a, 696a).

1-CYSTEINE

Bacteria Escherichia coli B/r

- (2) 0.1 M at pH=5, or pH=7.8 and 15 min. before irr., at 22-24°C., with subsequent irr. at 0°C. with various doses (350-450 r/min) in presence of O, 5, 20, and 100% O<sub>2</sub>.
- (3) Protected against death with all concentrations of O<sub>2</sub> in acid and alkaline media. (582)

Candida tropicans

- (2) 0.005-0.04 M during irr. 12,500 rad beta-rays Sr<sup>90</sup>.
- (3) Protected against death only with concentration 0.005 M; with 0.02 and 0.04 M--increased mortality. (800)

Neurospora Crassa, strains  
W 2/49A, Y 74A, Y8743

- (2) Depending on the strain, in concentrations: 0.001 M (subtoxic; 0.05 and 0.01 M 10 min. before and during irr. with doses up to 120 kr in air, or in N<sub>2</sub>. After irr--washing.
- (3) Protected against death with DRF=2.2 for W 2/49A; with DRF=1.8 for Y 74 A, and with DRF=1.3 for Y 8743. With protection in N<sub>2</sub>, DRF for Y 74A increased to 2.7; at the same time, irr. alone in N<sub>2</sub> gave DRF=2.1. Combination of the agent with 45% bouillon intensified protection also: DRF=2.7. (649)

Thymocytes of rats

- (2) 10<sup>-3</sup> M 20 min. before, or 15 min. after irr. 500 r.
- (3) Survival increased from 51 to 79% with administration before, but not after, irr. (494)

Rats

- (2) S.C. 1000 mg/kg before irr. with fast neutrons 507.96 rad.
- (3) Antiradiation effect absent. (267)

Rats, male, weight 180-210 g

- (2) I.P. 100 mg/kg 10 min. before irr. 650 r (30 r/min).
- (3) Protection. Criterion: decreased liver DNA depolymerization 72 hours after irr. only. (132)

Rabbits

- (2) I.V. 2 g immediately after irr. 1500 r of right eye, and 30 min. before irr. of the left eye.
- (3) Lessening of injury. (799)

l-CYSTEINE HYDROCHLORIDECells of ascites Erlich carcinoma

- (2) 0.5 mM/ml in physiological solution before irr. 2000 and 4000 r (400 r/min).
- (3) Protected RNA II, but not RNA I; completely with dose 2000 r, and partially with dose 4000 r. (509)

Rats, male, weight 200-250 g

- (2) I.P. 1000 mg/kg 10 min. before gamma-irr. Co<sup>60</sup> 750 r (7.5 r/sec).
- (3) Decreased urinary secretion of dyshepolozhitelnykh compounds. (268)

d-CYSTEINEBacteria Escherichia coli B/r

- (2) 0.1 M at pH=5 and pH=7.8 for 15 min. at 22-24°C. with subsequent irr. at 0°C. with various doses (350-450 r/min) in N<sub>2</sub>.
- (3) Protected against death at pH=7.8; almost no protection at pH=5. (582)

Candida tropicalis

- (2) 0.005-0.04 M during irr. 12,500 rad. beta-rays Sr<sup>90</sup>.
- (3) Survival with maximum protection (0.01-0.02 M) increased 29.1-30.5%; concentration 0.04 M showed almost no protection. (800)

CYSTINE; dicysteine, labocystine, nefrin, thiocytin, khansalbin, bis-(beta-amino-beta-carboxyethyl)-disulfide

Phage T 2

- (2) 1% with irr. 30,000-300,000 r (60,000 r/min).
- (3) Protected against death. Survival with 300,000 r increased from 0.001 to 1.5%. (608)

Human kidney cells (tissue culture)

- (2) 0.5 mM 10-30 min. before irr. 500-1500 rad (200 r/min).
- (3) Did not protect against death. (802)

Piglets

- (2) Before local irr. 1900, 2150, and 2350 r, 10% salve applied to the skin.
- (3) Protective effect. (694)

## CYTIDYLIC ACID

Mice

- (2) 2 and 5 mg 15 min. before gamma-irr. Co<sup>60</sup> 600 and 750 r.  
 (3) Survival with dose 600 r 40 and 52%, in controls, 35%; with dose 750 r, 12 and 27%; in controls, 0%. (768)

## CYTOSINE

White mice, rats, rabbits

- (2) I.P., or internally, before irr.  
 (3) Decreased mortality and prevented subsequent anemia (experiments on rabbits). (87)

## CYTOCHROME C (molecular weight 13,000; containing Fe-0.34%)

White rats, male, weight 150-180 g

- (2) I.P. 8 mg/kg 15 min. before irr. 750 r (40 r/min).  
 (3) Mortality of experimental and control animals was the same. (314)

## SODIUM CITRATE

Bacteria Escherichia coli B

- (2) 0.5 M immediately after irr. 16,000 r.  
 (3) Completely inhibited DNA breakdown. (585)

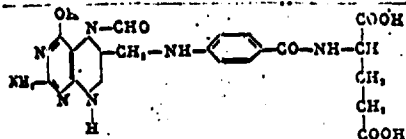
Bacteria Escherichia freundii

- (2) 0.0005 - 0.5 M immediately after irr. 54,000 r (18,000 r/min) with subsequent 30-120 min. incubation at 37°C.  
 (3) 0.5 M prevented, and 0.04 M intensified DNA breakdown. (683)

Bacteria Haemophilus influenzae

- (2) 0.15 and 0.5 M during 30-120 min. with postradiation incubation of cells irr. 48 kr (12 kr/min) at 0°C. in O<sub>2</sub>.  
 (3) Concentration 0.5 M almost completely inhibited postradiation DNA breakdown. (757)

CITROVORUM FACTOR; coferment Fe', leukovorin, folic acid, CF, citrovorin, N-(4-{[2'-amino-4'-oxy-5'-formyl-5',6',7',8',-tetrahydro-pyrimido-(4',5':v)-pyrazinyl-(6')]-methyl-amino-benzoyl}-glutamic acid

Rabbits

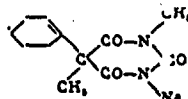
- (2) I.V. 3 mg 30 min. before local irr. of an eye. 1500 r.  
 (3) Protective effect absent. (799)

## THYROID GLAND

Mice

- (2) Administered in various doses raising, or not altering, the respiratory coefficient. Irr. 600 r.
- (3) With the increase of respiratory coefficient up to 1.1-1.25, the sensitivity to irr. increased. (700a)

EVIPAM: hexenal, hexanastab, narkonat, privenal, toleran, vitamin S-B<sub>1</sub>, 5-(delta<sup>12</sup>-cyclohexenyl)-5-methyl-N-methylbarbituric acid

Mice, male and female, strain H

- (2) I.P. 2 mg immediately before gamma-irr. Co<sup>60</sup> 1000 r (38-46 r/min).
- (3) By 5.5 days after irr., all experimental and control animals had died. (179)

White mice, male and female, weight 15 g

- (2) S.C. in doses 90, 125, 187 gamma/kg 15 min. before irr., or 45 gamma/kg, twice after irr. 480-640 r.
- (3) Survival in experimental groups, 30, 25, 37.2% respectively; all controls died. With administration after irr. therapeutic effect absent. (244)

## YEAST EXTRACT

Mice, male and female, strain H

- (2) I.P. 4 mg immediately after gamma-irr. Co<sup>60</sup> 1000 r (38-46 r/min).
- (3) By 5.5 days after irr. all experimental and control animals had died. (176)

White mice, strain X

- (2) I.P. 0.3 ml per three administrations, the first immediately after gamma-irr. Co<sup>60</sup> 600 r; then after 24 and 48 hours.
- (3) Mortality by 20th day after irr., 13.3%; in controls, in the same period of time, 75%. (180)

Mice, strain H

- (2) I.P. 0.1 ml during 2 days after gamma-irr. Co<sup>60</sup> 600 r (10 r/min).
- (3) Mortality by 20th day after irr., 50%; in controls, 100%. (180)

Mice, strain H

- (2) I.P. 4 mg after gamma-irr. Co<sup>60</sup> 500 r.
- (3) Mortality by 20th day after irr., 50%; all controls died. (180)



## GINSENG EXTRACT

Rats

- (2) 0.2 ml daily with gamma-irr. Co<sup>60</sup> (54 r/day).
- (3) Length of life increased 13-21%. (57)

## EXTRACT of Eleuterococcus senticosus Rupr. et Maxim

Mice

- (2) 0.005 ml/20 g during 15 days before irr. 500 r, on alternate days.
- (3) Survival 75%; in controls, 45%. (57)

## EXTRACT OF AMANITA muscaria, A. pantherina

Rabbits

- (2) 10% salve applied to rabbit's ear during 4 days after local irr. 500 r/day (total dose 2500 r), and then during 3 days after second irr. with dose 1000 r (35 r/min).
- (3) Normalization of the skin of the ear occurred in 8-12 days; in controls, in 36-42 days. (216)

## EXTRACT OF NAPHTHALAN

Rabbits

- (2) Applied to skin before or after application of breakdown products of toron with alpha-radiating isotopes (thorium C + thorium C<sup>1</sup>) 0.06.-6 mkeurie per 1 cm<sup>2</sup> for 20 hours.
- (3) With administration before irr., in 2½-7 days, basal layer of epidermis (radiosensitive) completely protected against injury from alpha particles. Protective effect registered also with administration during, immediately after, and 12 hours after irr. (173) See also (323a).

## EXTRACT OF PARATHYROID GLAND

Rats

- (2) S.C. 50-200 units, at various times after irr. 800 r.
- (3) Maximum protective effect 5 min. after irr. With administration 3 hours after irr., effect decreased by half, with administration 5 hours after irr., protective effect absent. (721)

## LIVER EXTRACT

Mice, male, strain H

- (2) I.P. 0.1 ml immediately after gamma-irr. Co<sup>60</sup> 1000 r (38-46 r/min).
- (3) Mortality in 6.5, 7.5, and 10 days after irr., 75, 83, and 91.7%; in controls, mortality 91.7, 91.7, and 100% respectively. (179)

## SPLEEN EXTRACT FROM MICE

Mice

- (2) I.M. immediately, 24, or 48 hours after irr. 570 r.
- (3) Increase in survival only with administration 24 hours after irr. (742)

SPLEEN EXTRACT from newborn rats, or from large cattle

Rats, male and female, weight 140-200 g

- (2) I.V. 0.5 ml after 2-3 hours, and then during 6 days after irr. 500 r.
- (3) Thromboplastic blood activity in experimental animals did not differ from controls. (249)

PITUITARY EXTRACT

Rats

- (2) S.C. 0.02 ml 1 day before, and during 5 days after irr.
- (3) Decreased lymphocytopenic effect of roentgen rays. (650)

EMBRYONAL CELLS, ISOLOGOUS

Mice, strain A

- (2) I.V. 0.5 ml ( $2 \times 10^6$  -  $25 \times 10^6$  cells) 6-17 hours after irr. 790 r.
- (3) Survival 30-75%. (822)

EMBRYONAL CELLS, HOMOLOGOUS

Mice, strain A

- (2) I.V. 0.5 ml ( $2 \times 10^6$  -  $25 \times 10^6$  cells) 6-17 hours after irr. 790 r.
- (3) Administration of cells from 1-12 day old embryos not effective. Administration of cells from 14-15, 18-19 day old embryos increased survival up to 30-50%. (822)

ENDOTOXIN FROM E. coli

Rats

- (2) No entry.
- (3) Administration before irr. increased radioresistance of animals. (829)

ENDOTOXIN FROM PROTEUS morganii

Mice

- (2) One day before, or 2 days after irr. 600 r.
- (3) With administration before irr. mortality decreased from 71 to 2%; with administration after irr. the effect absent. (357b)

ERGOTHIONEIN; ergothionin

Candida tropicalis

- (2) 0.005 - 0.04 M during irr. 12.5 krad beta-rays  $Sr^{90}$ .  
 (3) Increased mortality with all concentrations. Survival with 0.01 M was 13.5% less than in controls. (800)

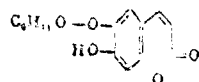
Mice

- (2) I.P. 500, 1000 mg/kg before irr. 800 r.  
 (3) Antiradiation effect absent. (451)

ERYTHRO-p-NITROPHENYL-1-OXY-2-DICHLORACETAMIDOPROPANTHICOLWhite mice, female, strain E, weight 17 g

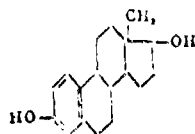
- (2) Before irr. 900 r.  
 (3) Survival 3.3%; in controls, 0%. (330)

ESCULIN; bicolorin, vitamin C<sub>2</sub>, eskozil, eskulozid, 6,7-dihydroxycoumarin-6 -(beta-d-glucopyranosid)

Rabbits

- (2) 10-20% solution applied to skin before irr. 300, 600, or 800 r.  
 (3) Administration of 2% solution decreased mortality 15.5%; 10% solution not effective. (317a)

ESTRADIOL; almediol, altrad, aquadiol, aquiol, bardiol, dihydrofolliculin, dioxyestrin, ginergon, ginoestril, makrodiol, esteron, estroform, estraldin, estrogil, femestrol, femogen, folanil, follicycline, ovocycline, primogin, profioliol, sindiol, 17-beta-estradiol

Mice, Swiss line

- (2) 9 days before irr. 550 r.  
 (3) Protective effect. (779)

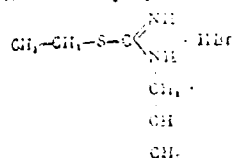
Rats, female

- (2) I.M. 0.15 mg during 6 days before irr. 700 r.  
 (3) All experimental and control animals died. (660a)

White mice, male, Swiss line, 20 days old

- (2) S.C. daily, during 10 before gamma-irr.  $Co^{60}$  665-725 r (17-20 r/min). Total dose of preparation 165 mg.  
 (3) By 35th day after irr. 22 mice died out of 60. In controls 41 mice died out of 60. (723)

## S-ETHYL-N-ALLYLTHIOUREA HYDROBROMIDE

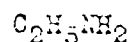


Yeasts *Saccharomyces vini*, Megri strain 139 B

(2)  $10^{-1}$  -  $10^{-2}$  M 15-20 min. before irr. 30, 45, and 60 kr (1000 r/min).

(3) Did not protect against death. (185)

## ETHYLAMINE



Human and pig erythrocytes

(2)  $5 \times 10^3$  -  $3 \times 10^4$  M in neutral solution before, or after irr. (1100 r/min).

(3) Did not protect against hemolysis. (471)

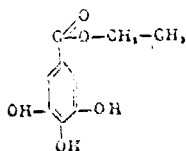
## ETHYLAMINOCISOTHIURONIUM BROMIDE HYDROBROMIDE

Rats, male, weight 200-250 g

(2) I.P. 250 mg/kg 10 min. before gamma-irr. 750 r (7.5 r/sec).

(3) Decreased urinary secretion of dyshepolozhitelnykh compounds. (268)

## ETHYLGALLATE; ethyl ester of gallic acid



Mice

(2) 60 mg/kg 30 min. before irr. 600 r.

(3) Survival in experimental group 20%; in controls, 0-1.6%. (78a)

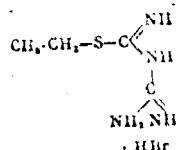
## S-ETHYLGUANYLTHIOUREA

Mice, male, Swiss line, weight 21 g

(2) I.P. 10 mg/mouse 5-10 min. before irr. 900 r.

(3) Survival 5%; in controls--2%. (753)

## S-ETHYLGUANYLTHIOUREA HYDROBROMIDE



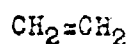
Yeasts *Saccharomyces vini*, Megri strain 139 B

(2)  $10^{-2}$  -  $10^{-3}$  M 15-20 min. before irr. 30, 45, 60 kr

(1000 r/min).

- (3) Did not protect against death. (185)

# ETHYLENE



## Germinating seeds of beans *Vicia faba*

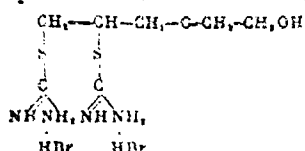
- (2) In calorimetric bomb, up to 20 atm.  $\text{C}_2\text{H}_2$  added to 2 atm. air and held 10 min. before, during, and 5 min. after irr. 200 r (50 r/min).
- (3) Decreased growth inhibition. The rapidity of growth at 15 atm. was approximately twice as high as with irr. in air. (225)

# ETHYLENEBIGUANIDE

## White mice, male, weight 18-20 g

- (2) Internally 0.0005 g/mouse 1 hour before gamma-irr. 700 r.
- (3) Survival increased 10%. (41)

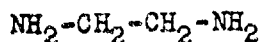
# ETHYLENEGLYCOLIC ETHER of 2,3-DI-(ISOTHIURONIUMBROMIDE)-PROPANOL



## White mice

- (2) I.P. 37.5 and 50 mg/kg before irr. 700 r.
- (3) Protective effect absent. (343)

# ETHYLENEDIAMINE



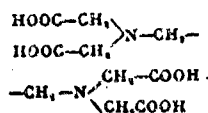
## Paramecium caudatum

- (2) In subtoxic concentration with irr. 10,000 r (460 r/min).
- (3) Very weakly protected against inhibition of division tempo. (143)

## Mice, female, strain H

- (2) I.P. and I.V. 3 mg immediately before gamma-irr.  $\text{Co}^{60}$  1000 r (38-46 r/min).
- (3) By 7.5 days after irr. all experimental and control animals had died. (179)

# ETHYLENEDIAMINOTETRAACETIC ACID; EDTA



Thymocytes of rats

- (2) 0.008, 0.016, 0.033 M with irr. 300 r, with subsequent incubation for 6 hours.
- (3) Number of pycnotic cells 32, 25, and 15% respectively; in controls, 80%. (387)

Mice, female, strain H

- (2) I.P. 2 mg immediately before gamma-irr.  $\text{Co}^{60}$  1000 r (38-46 r/min).
- (3) Mortality by 5.5, 7.5, and 10 days after irr. 58.3, 58.3, and 91.7% respectively; all controls died in 5.5 days. (179)

ETHYLENEDIAMINETETRAACETIC ACID DISODIUM SALT;  $\text{Na}_2$ -EDTA, versen, idranal III, complexon III, nullapons, prokhelat, sekvestren, titriplex III, trilon B

Seeds of beans *Vicia faba*

- (2) 0.001 M during 3 hours before irr. 600 r.
- (3) Increased the frequency of formation of chromosome fragments, dicentrics and rings. (820b)

Rats, male, weight 270-340 g

- (2) 300 mg/kg before, or immediately after, irr. 740 r.
- (3) Pronounced prophylactic and therapeutic effect. (722)  
See also (617).

ETHYLENEDIAMINETETRAACETATE CALCIUM SALT;  $\text{Ca}$ -EDTA

Rats, male, weight 270-340 g

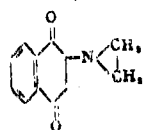
- (2) 300 mg/kg before irr. 740 r.
- (3) Weak protective effect. (722)

S-S-ETHYLENEDIISOUREA

*Candida tropicalis*

- (2) 0.005-0.04 M during irr. 12.5 kr beta-rays  $\text{Sr}^{90}$ .
- (3) Did not protect against death. (800)

2-ETHYLENEDIAMINO-1,4-NAPHTHOQUINONE

Rats with Walker 256 carcinoma

- (2) I.V. 30 min. before irr. of carcinoma, dose 1100 r.
- (3) Radiosensitizing effect absent. (650a)

S-ETHYLISOTHIURONIUM BROMIDE

Mice

- (2) I.P. 250 mg/kg 45 min. before irr. 1007 r.
- (3) Survival 62.5%; all controls died. (371)

Mice

(2) I.P. 150-300 mg/kg before irr. 700 r.

(3) Antiradiation effect observed. (212)

N-ETHYLMALIMID

Bacteria Escherichia coli B/r,  
Staphylococcus aureus, Pseudomonas sp.,  
and spores of Bacillus subtilis

(2) 0.001 M 15 min. before, during, or after gamma-irr.  $Co^{60}$  up to 100 krad (300 krad/hour) with bubbling through of air or  $N_2$ .

(3) Sensitized E. coli and S aureus with administration during irr. in aerobic, and especially in anaerobic conditions. Bacteria Pseudomonas sp. sensitized only with irr. in  $N_2$ . Did not affect survival of spores. (404)

Bacteria Shigella sonnei

(2) 0.2 mM 30 min. before irr. with doses up to 10 krad (3000 rad/min) with bubbling through of air or  $N_2$ .

(3) Sensitized to radiation in the presence, as well as in the absence of  $O_2$ . In anoxic conditions the sensitizing effect was higher. (620)

Monocomplex of Phage 2 and Escherichia coli

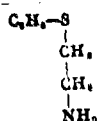
(2)  $10^{-4}$  M before irr. with doses up to 300 kr in  $N_2$  and in the presence of 2 mM  $O_2$ .

(3) Sensitized to effects of radiation with irr. in  $N_2$ , and did not affect the survival with irr. in the presence of  $O_2$ .

Rabbit erythrocytes

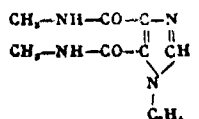
(2)  $10^{-4}$  -  $10^{-3}$  M 30 min. before irr. 159 kr (5300 r/min).

(3) Did not affect the excretion of K and of hemoglobin. (709)

S-ETHYL-beta-MERCAPTOETHYLAMINEWhite mice

(2) I.P. in 2-3 doses, one a maximum dose, 5-15 min. before irr. with absolute lethal dose. (700r)

(3) Protective effect absent. (311)

ETHYLNORANTIPHEIN; IEM 306

White mice, male, weight 18-22 g

- (2) S.C. 25, 50, and 100 mg/kg 30 min., and 5, 10, 25, and 100 mg/kg 1 hour before irr. 700 r (33.5 r/min).
- (3) With administration 30 min. before irr. corresponding to doses, out of 33 animals 25 survived, out of 55-41; and out of 32-18; in controls, correspondingly, out of 36 mice, 12 survived; out of 48-15, and out of 26-6. With administration 1 hour before irr. corresponding to doses, 16 survived out of 30, 17 out of 30, and 34 out of 48. In controls, correspondingly, 4 out of 24, 4 out of 24, 15 out of 46, and 7 out of 22. (23)

White mice, male, weight 18-22 g

- (2) S.C. 50 mg/kg 30 min. before irr. 700 r.
- (3) Absolute protective effect 35%. (151)

White rats, male, weight 180-220 g

- (2) S.C. 25 mg/kg 30 min. before irr. 800 r.
- (3) Absolute protective effect 33%. (151)

Rabbits, male, weight 2-2.5 kg

- (2) S.C. 15 mg/kg 30 min. before irr. 1000 r.
- (3) Antiradiation effect absent. (151)

Dogs, male, weight 14-16 kg

- (2) S.C. 15 mg/kg 30 min. before irr. 600 r.
- (3) Antiradiation effect absent. (151)

Mice

- (2) No entry.
- (3) (152).

## ETHYL ALCOHOL

Germinating seeds of beans *Vicia faba*

- (2) 0.2-1.1 M 10 min. before, during, and 5 min. after irr. 200 r (50 r/min).
- (3) 0.7 M concentration gave maximum protection against growth inhibition. (Rapidly of growth approximately 1.6 times higher than in controls). (225)

Bacteria *Escherichia coli* K 12

- (2) 0.1-2.5 M during 15-30 min. with irr. 45,000 r (60,000 (sic) r/min).
- (3) Maximum protection against death reached with 1-1.5 M. (61)

Tadpoles of *Rana esculenta*

- (2) 2 and 2.5% 5 min. before and during irr. 27,500 r (1100 r/min).
- (3) Average length of life increased from 5 to 8 days. (703)



Mice, male and female, strain H

- (2) I.V. 50 mg immediately before gamma-irr. Co<sup>60</sup> 1000 r (38-46 r/min).
- (3) In 7.5 days after irr., the mortality 91.7%; all controls died by that time. (179)

Mice

- (2) Before irr. 700 r.
- (3) Increased survival. (535)

Rats

- (2) Internally 15 ml/kg 25% solution during 40, 60, 90, and 120 days before irr. and 3 days after irr. 800 r.
- (3) Increased survival. (446)

## ETHYL ESTER of 3-AMINO-1-PHENOXAZINE CARBOXYLIC ACID

Yeasts Saccharomyces vini

- (2) 10<sup>-8</sup> M/ml before gamma-irr. Co<sup>60</sup> in aqueous solution; dose 50,000 r.
- (3) Protective effect absent. (114)

## ETHYL ESTER of 3-ACETAMINO-1-PHENOXAZINOYLGLYCINE

Yeasts Saccharomyces vini

- (2) 10<sup>-8</sup> M/ml before gamma-irr. Co<sup>60</sup> in aqueous solution; dose 50,000 r.
- (3) Protective effect absent. (114)

## ETHYL ESTER of 3-ACETYLAMINO-PHENOXAZINE-1-CARBOXYLIC ACID

Yeasts Saccharomyces vini

- (2) 10<sup>-8</sup> M/ml before gamma-irr. Co<sup>60</sup> in aqueous solution; dose 50,000 r.
- (3) Protective effect absent. (114)

## ETHYL ESTER of 3-NITRO-1-PHENOXAZINE-CARBOXYLIC ACID

Yeasts Saccharomyces vini

- (2) 10<sup>-8</sup> M/ml before gamma-irr. Co<sup>60</sup> in aqueous solution; dose 50,000 r.
- (3) Protective effect absent. (114)

## ETHYL ESTER of TETRAETHYLAMIDPHOSPHORIC ACID

Mice

- (2) S.C. 1/4 LD<sub>50</sub> 8 days before irr. 600 r, and 7 days before irr. 700 r.
- (3) Survival 25 and 60% higher than in controls. (18) See also (174).

## ETHYL ESTER of 3-CHLORACETYLAMINOPHENOXAZINE-1-CARBOXYLIC ACID

Yeasts *Saccharomyces vini*

- (2) Added to culture in concentration  $10^{-8}$  M/ml before gamma-irr.  $\text{Co}^{60}$  50 kr in aqueous solution.
- (3) Protective effect absent. (114)

## ETHYL ESTER of L-CYSTEINE

Bacteria *Escherichia coli* B/r

- (2) 0.1 M at pH=7.8, 15 min. at 22-24°C. before irr. with subsequent irr. at 0°C., with various doses (350-450 r/min).
- (3) Protected against death. (582)

White rats

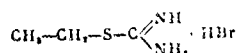
- (2) I.P. 70 mg/100 g 15 min. before gamma-irr.  $\text{Co}^{60}$  700 r.
- (3) Survival 20%; all controls died. (188)

## ETHYL ESTER of CYSTEINYL-GLYCINE HYDROCHLORIDE

White rats

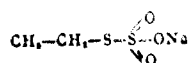
- (2) I.P. 70 mg/100 g 15 min. before gamma-irr.  $\text{Co}^{60}$  700 r.
- (3) Survival 40%; all controls died. (188)

## S-ETHYLTHIOUREA HYDROBROMIDE

Yeasts *Saccharomyces vini*, Megri strain 139 B

- (2)  $10^{-2}$  -  $10^{-4}$  M 15-20 min. before irr. 30, 45, 60 kr (1000 r/min).
- (3) Did not protect against death. (185)

## SODIUM ETHYLTHIOSULFATE

Yeasts *Saccharomyces vini*, Megri strain 139 B

- (2)  $10^{-2}$  M 15-20 min. before irr. 30, 45, 60 kr (1000 r/min).
- (3) Did not protect against death. (185)

## ETHYLPALMITATE

Mice

- (2) I.V. 50-75 mg 48 hours before irr. 690 r.
- (3) Survival 21%; in controls, 74%. (468)

## 1-ETHYLPIPERAZINE-4-CARBODITHIOIC ACID

Mice

- (2) 10 mg/kg 30 min. before irr. 600 r.

(3) Survival 55%; in controls--20%. (474a)

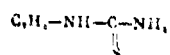
# ETHYLSTEARATE

## No entry

(2) No entry.

(3) (473b).

# N-ETHYLTHIOUREA

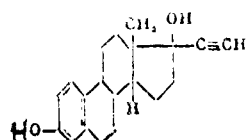


## Mice

(2) I.P. 50, 100 mg/kg before irr. 800 r.

(3) Antiradiation effect absent. (451)

# ETHYNYLESTRADIOL

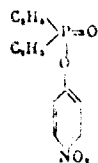


## White mice, and rats, male and female

(2) Internally 0.1-10 mg once, or twice, 5-10 days before, or 1 hour after gamma-irr.  $\text{Co}^{60}$ , in doses 650-750 r for mice, and 700-750 r for rats.

(3) Protective effect absent. (94)

# ETOXY-p-NITROPHENYL ESTER of ETHYLPHOSPHORIC ACID; armin

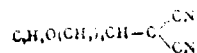


## White mice, female, weight 17 g

(2) S.C. in aqueous solution 0.2 + 0.008 mg/kg 10 min. before irr.; or 1, 2, 3, 4 days after irr. 750 ± 25 r (60 r/min).

(3) Survival with prophylactic administration, 20%; with administration after irr. (1, 2, 3, 4 days) 20, 30, 36.6, 10% respectively. In controls, 6.6%. (178)

# ETOXYPROPYLIDEN-MALONITRILE



## Mice

(2) Before irr. 800 r.

(3) Weak antiradiation effect. (451)

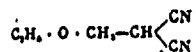
# 5-ETOXYTRYPTAMINE

White mice

(2) I.P. before irr. 700 r.

(3) Highly toxic; had almost no effect on the survival. (156)

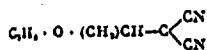
## ETOXYETHYLENEMALONITRILE

Mice

(2) Before irr. 800 r.

(3) Weak antiradiation effect. (451)

## ETOXYETHYLIDENMALONITRILE

Mice

(2) Before irr. 800 r.

(3) Antiradiation effect absent. (451)

## 2-ETOXYETHYL ESTER of CYSTEINE

White rats, male

(2) I.P. 100 mg/100 g before gamma-irr.  $\text{Co}^{60}$  750 r.

(3) Survival 5%; in controls, 3%. (354)

## EPHEDRINE HYDROCHLORIDE

Mice

(2) I.P. 100 mg/kg 15 min. before irr. 1000 rad.

(3) Protective effect absent. (746)

Mice, male, strain H

(2) I.P. 0.1-1.0 mg immediately before gamma-irr.  $\text{Co}^{60}$  1000 r (38-46 r/min).

(3) Within 10 days after irr. all experimental and control animals died. (179)

Mice

(2) Before irr. 700 r.

(3) Antiradiation effect absent. (358)

White mice, weight 22-25 g

(2) I.P. 1.0 ml 0.5% solution 5-25 min. before irr. 600 r.

(3) Antiradiation effect absent. Length of life of experimental animals was shorter than in controls. (198)

Mice

(2) No entry.

(3) (245).

ETHER; pronarcol

Germinating seeds of beans *Vicia faba*

- (2) 0.2-0.5 M 10 min. before, during, and 5 min. after irr. 200 r (50 r/min).
- (3) Corresponding to concentrations, protected against growth inhibition. With maximum protection rapidity of growth was approximately 1.4 times higher than in controls. (225)

Tadpoles of *Rana esculenta*

- (2) 0.1% 5 min. before and during irr. 27,500 r (1100 r/min).
- (3) Average length of life increased from 6 to 15 days. (703)

SODIUM MALATE

Mice, male and female, strain H

- (2) I.P. 5 mg immediately before gamma-irr. Co<sup>60</sup> 1000 r (38-46 r/min).
- (3) Mortality in 5.5, 7.5, and 10 days after irr. 58.3, 58.3, and 91.7 respectively; in controls mortality 66.7, 83.3, and 100%. (179)

SUCCINIC ACID

Bacteria *Escherichia coli* B

- (2) 0.5 M immediately after irr. 16,000 r, with 30-60 min. incubation at 37°C.
- (3) Completely inhibited DNA breakdown. (585)

Bacteria *Escherichia coli* B/r

- (2) Administered during irr. of bacterial suspension containing  $10^5 - 10^9$  cells/ml.
- (3) Protection against death observed only in concentrated suspensions; short aeration before irr. obliterated protective effect. (493)

Rats with MTK-III sarcoma

- (2) I.P. before irr.
- (3) Lesser inhibition of mitosis. (480)

## SECTION II

### COMBINED USE OF THERAPEUTIC AGENTS FOR PROPHYLAXIS OF RADIATION INJURIES

#### ATP, ADP, AMP, AND HOMOLOGOUS SPLEEN HOMOGENATE

##### Rats

- (2) I.P. 0.5 mg homologous spleen homogenate from 3-month old rats, once, immediately after irr. with electrons 15 Mev, Dose 800 ber.; and I.M. 1 mg mixture (65-80% ATP, 20-25% ADP, and 4-8% AMP) during 3 days.
- (3) Acceleration of erythro-and myelopoiesis. (772)

#### ADRENALIN AND ACETYLCHOLINE

##### White mice, weight 18-20 g

- (2) S.C. adrenalin, 12.5 gamma/mouse, and acetylcholine, 1.5 mg 5-10 min. before irr. 700 r, or gamma-irr. Co<sup>60</sup> 1050, 1150, 1300 r.
- (3) Survival with roentgen irr. 8%; with gamma-irr. corresponding to doses, 33, 14, and 1.5%; all controls died. (289)

##### White mice, male and female, weight 18-22 g

- (2) S.C. adrenalin, 12.5 gamma/mouse and acetylcholine, 0.5 mg/mouse 5 min. before irr. 1100 r.
- (3) By 30th day after irr. 28 mice survived out of 136; all controls (320 mice) died. (291) See also (290).

#### ADRENALIN, ACETYLCHOLINE, AND CYSTAMINE

##### Guinea pigs

- (2) Before irr.
- (3) Intensification of adrenal function. (53a)

#### ADRENALIN AND OXYGEN

##### White mice, male and female, weight 18-20 g, 8-12 weeks old

- (2) S.C. 0.1 mg/mouse 15 min. before gamma-irr. Co<sup>60</sup> (280 r/min) with 98-99, or 21% O<sub>2</sub>.
- (3) Survival 48.4 and 75%; in controls, 12.7 and 10.7%. (85)

#### ALINAMIN (thiamine-propyldisulfide), HEXONIUM, NEMBUTAL

##### Dogs

- (2) Alinamin--1.5 mg/kg, hexonium--3 mg/kg, nembutal--30mg/kg before irr. of cerebellum 9000 r.
- (3) Absence of cerebellum disorders; lesser degree of disturbances in oxydizing phosphorylation in mitochondria of nerve tissue; absence of changes in vitamin B<sub>1</sub> content of cerebellum. (191)

## AMINAZINE AND PHENAZINE

Cats

- (2) I.M. 30 min. before irr. 550 r.
- (3) Survival higher than in controls. (234)

Dogs

- (2) I.P. 30 min. before irr. 400, 500, or 600 r.
- (3) Survival by 30th day after irr. 60% higher than in controls. (234)

p-AMINOPROPIOPHENONE (PAPP) and S-beta-AMINOETHYLISOTHIURONIUM Br·HBr (AET)

Dogs

- (2) I.P. 3 mg/kg 20-90 min. before irr. 500 r., and I.V. 100 mg/kg, or 50 mg/kg AET ; or 3 mg/kg PAPP, and internally 250 mg/kg AET; 3 mg/kg PAPP and 1000 mg/kg AET with 800 r.
- (3) Corresponding to combinations of doses of preparation with irr. dose 500 r, out of 6 experimental dogs 5, 2, and 2 survived. With dose 800 r 1 dog survived out of 6. In controls, with dose 500 r, 1 dog survived out of 6, and with 800 r, all died within 12-3 days. (393)

## AMINOETHYLISOTHIURONIUM BROMIDE HYDROBROMIDE AND METACYL

White mice

- (2) I.P. AET 150 mg/kg 15-20 min. before irr., metacyl internally, or S.C. 10-150 mg/kg daily, during 3 days, starting from 3rd day after irr. 600 r. (76.7 r/min).
- (3) Positive effect on leukopoiesis. (274)

2-AMINOETHYLISOTHIURONIUM BROMIDE HYDROBROMIDE (AET) AND 5-OXYTRYPTAMINE CREATINE SULFATE (5-HT)

Mice, female, DAL-Swiss line, weight 17-20 g

- (2) I.P. AET and 5-HT 20-30 min. before irr. 460, 900 and 1200 r.
- (3) By 60th day after irr. survival corresponding to doses of irr., 40, 20 and 15%; all controls died. (610)

## AMINOETHYLISOTHIURONIUM BROMIDE HYDROBROMIDE AND OROTIC ACID

White mice

- (2) I.P. AET 150 mg/kg 15-20 min. before irr. Orotic acid internally, or S.C. 10-15 mg/kg daily, over 3 days, starting from 3rd day after irr. 600 r (76.7 r/min).
- (3) Positive effect on leukopoiesis. (274)

## AMINOETHYLISOTHIURONIUM BROMIDE HYDROBROMIDE AND PENTOXYL

White mice

- (2) I.P. AET 150 mg/kg 15-20 min. before irr. Pentoxyl internally, or S.C. 150 mg/kg daily, over 3 days, starting from the 3rd day after irr. 600 r (76.7 r/min).

- (3) Positive effect on leukopoiesis. (274)

AMINOETHYLISOTHIURONIUM BROMIDE (AET) AND CYSTEAMINE

No entry

- (2) No entry.

- (3) Weakening of protective effect of the mixture. (807)

AMINOETHYLISOTHIURONIUM (AET) AND CYSTEINE

Monkeys Macaca mulatta, weight 4-5 kg

- (2) I.V. 100 mg/kg AET and 500 mg/kg cysteine with irr. 800 r.  
(3) Increased average length of life. Blood changes less pronounced than in controls. (791)

Monkeys Macaca mulatta

- (2) I.V. AET 75 mg/kg, cysteine 225 mg/kg 1 hour before irr. .... Fifteen min. before irr. 900 r, additional 150 mg/kg AET, and 150 mg/kg cysteine.  
(3) In the experimental group, 3 monkeys survived; in controls, 1. (364)

AMINOETHYLISOTHIURONIUM BROMIDE (AET), THIOGEL A AND ISOLOGOUS BONE MARROW

Mice, male and female, line XVII, 60 days old

- (2) Internally 8.5 mg AET and 100 mg thiogel A. Irr. 900 r, and again 300 r (head screened) (100 r/min). 2 hours after irr., LV.,  $2 \times 10^7$  bone marrow cells.  
(3) By 7th day after irr., all controls died; out of 23 experimental mice 9 survived. (609)

S-beta-AMINOETHYLISOTHIURONIUM Br·HBr (AET), CYSTAMINE AND ADRENALIN

Monkeys Macaca mulatta

- (2) I.V. 100 mg/kg AET and 500 mg/kg cystamine, S.C., adrenalin 1 hour before irr. 800 r.  
(3) 5 monkeys out of 6 were alive 90 days after irr.; out of 7 controls, 5 died on the 14-18th day after irr. (791)

AMINOETHYLISOTHIURONIUM BROMIDE (AET), CYSTEINE, AND HOMOLOGOUS BONE MARROW

Monkeys Macaca mulatta

- (2) I.V. AET 75 mg/kg and cysteine 225 mg/kg 1 hour before irr. 900 r (20 r/min). 15 min. before irr., AET 150 mg/kg and cysteine 150 mg/kg internally, 72 hours after irr., suspension of bone marrow cells I.V.  
(3) In the experimental group 4 monkeys survived; in controls, 1. (364)

ANTIBONE MARROW CYTOTOXIC SERUM, VITAMIN B<sub>12</sub>, and STREPTOMYCIN

Rats

- (2) S.C. serum, vitamin B<sub>12</sub> (1 gamma), and streptomycin (3000



units) one day after irr. 700 r (25 r/min).

- (3) Radiation sickness had more severe course; mortality in the experimental group was higher. (334)

#### ANTILIVER CYTOTOXIC SERUM, VITAMIN B<sub>12</sub>, and STREPTOMYCIN

##### Rats

- (2) S.C. serum, vitamin B<sub>12</sub>, (1 gamma) and streptomycin (3000 units).
- (3) Antiradiation effect absent. (334)

#### ANTIRETICULAR CYTOTOXIC SERUM (ATs) (ACS), VITAMIN B<sub>12</sub>, and STREPTOMYCIN

##### Rats

- (2) S.C. ACS, vitamin B<sub>12</sub> (1 gamma) and streptomycin (3000 units) after irr. 700 r (25 r/min).
- (3) 2 experimental rats died out of 10; out of 10 controls, 7 died. (334)

#### BATYL ALCOHOL, LEUKOGEN, AND KAFERID

##### Dogs, weight 9-16 kg

- (2) Batyl alcohol and leukogen, 0.02 twice a day. Kaferid 1 tablespoon, twice a day, 6-7 days after irr. with biomycin and levomycetin therapy. Radiation dose 600 r.
- (3) Out of 14 experimental animals 2 died; out of 15 controls, 12. (281)

#### BENZYLTRYPTAMINE AND ACETYLCHOLINE

##### White mice, weight 18-20 g

- (2) S.C. 0.3 mg/mouse benzyltryptamine and 1.5 mg/mouse acetylcholine 5-10 min. before irr. 700 r.
- (3) Survival 24%; all controls died. (289)

#### BIOMYCIN, LEVOMYCETIN, BATYL ALCOHOL, LEUKOGEN, AND KAFERID

##### Dogs

- (2) Complex therapy conducted according to plan used at the State Scientific Research Roentgen-Radiological Institute of the Ministry of Health of USSR. Irr. dose 600 r.
- (3) Out of 14 dogs treated 2 dogs died; out of 15 controls, 12. In the treated animals the course of radiation disease was lighter, more rapid restoration of elements in bone marrow, and in peripheral blood. (282)

#### BICILLIN-3 and VITAMIN B<sub>12</sub>

##### Rats, male, weight 180 ± 20 g

- (2) Bicillin 50,000 units on the 1st, 8th, and 15th day after irr., vitamin B<sub>12</sub>, 4 gamma/rat on alternate days, during 20 days after irr. 750 r (25.4 r/min).
- (3) 17 rats survived out of 20; out of 45 controls, 3. (40)

## BICILLIN, STREPTOMYCIN, CHLORTETRACYCLINE, AND PENICILLIN

Dogs

- (2) For prophylactic and therapeutic purposes with irr. 600 r and gamma-irr. Co<sup>60</sup> 350, 400, and 600 r.
- (3) Survival of experimental animals was insignificantly higher than in controls. (253a)

BK-8, VITAMIN B<sub>12</sub>, STREPTOMYCINRats

- (2) S.C. BK-8 0.5 ml immediately after irr. on alternate days, vitamin B<sub>12</sub> 1 gamma, and streptomycin 30,000 units after irr. 700 r (25 r/min).
- (3) 6 animals died out of 20; 13 controls died out of 20. (334)

## CAFFEINE AND SODIUM BROMIDE

Rabbits

- (2) 0.4 and 0.075 g in a mixture 1-1.5 hours after irr. 1000 r.
- (3) Decreased phase disorders and somewhat increased survival. (246)

VITAMINS B<sub>1</sub>, B<sub>2</sub>, PPRabbits, male and female, weight up to 2 kg

- (2) Vitamin B<sub>1</sub> and PP 10 mg each, B<sub>2</sub>--5 mg daily, during a week after gamma-irr. Co<sup>60</sup> 1000 r.
- (3) All experimental rabbits survived, while 14 died out of 30 controls. In experimental animals leukopenia less pronounced, as was normalization of blood sugar and blood lactic acid level. (346)

VITAMINS B<sub>1</sub>, B<sub>2</sub>, B<sub>6</sub>, and PHOSPHATIDE CONCENTRATEWhite rats

- (2) Introduced with synthetic diet; irr. 50-100 r, or gamma-rays Co<sup>60</sup>.
- (3) Lesser disturbances in lipid metabolism and lesser changes in ascorbic acid content. (61)

VITAMINS B<sub>1</sub>, B<sub>2</sub>, PP, C, PRabbits, male and female, weight up to 2 kg

- (2) Vitamins B<sub>1</sub>, PP, C, P, 10 mg each; vitamin B<sub>2</sub>, 5 mg daily during 7 days after gamma-irr. Co<sup>60</sup> 1000 r.
- (3) Leukopenia much less pronounced, especially with prophylactic administration of vitamins. (345)

Rabbits, male and female, weight up to 2 kg

- (2) Vitamins B<sub>1</sub>, PP, C, P 10 mg each; B<sub>2</sub> - 5 mg daily during a week before, or after gamma-irr. Co<sup>60</sup> 1000 r.

- (3) Normalization of interreaction between carbohydrate metabolism and insulin and adrenalin. Effect more pronounced with prophylactic administration. (347)

VITAMINS B<sub>1</sub>, B<sub>2</sub>, B<sub>6</sub>, PP, B<sub>12</sub>, FOLIC ACID, PARAAMINOBENZOIC ACID

White mice

- (2) S.C. B<sub>1</sub>, B<sub>2</sub>--0.2 mg; B<sub>6</sub>--0.1 mg; PP--0.2 mg; B<sub>12</sub>--0.4 mg; folic acid--0.1 mg; paraaminobenzoic acid--0.2 mg 3 days after irr. and then on alternate days after irr. 300, 400 r (63-20 r/min).
- (3) In experimental groups survival 100 and 58% respectively; in controls, 84 and 50%. (176)

VITAMINS B<sub>1</sub>, B<sub>6</sub>, B<sub>12</sub>, FOLIC ACID, TRYPTOPHAN AND HISTIDINE

Guinea pigs

- (2) Therapeutic agents administered daily for the whole period of irr. Irr. 10 r per day to total dose of 600 r.
- (3) Survival 20-30% higher than in controls. (47)

VITAMIN B<sub>12</sub>, K, C, and DL-CIS-2-AMINO-CYCLOHEXANTHIOL · HCl

Mice

- (2) No entry.
- (3) (353a).

VITAMIN B<sub>12</sub> and TRACE ELEMENTS (mixture of copper, magnesium, manganese, zinc, nickel, cobalt)

White rats

- (2) I.P. 1 ml solution containing: B<sub>12</sub>--0.005 mg, MgCl<sub>2</sub>--30.499 mg, Cu--9.426 mg, Mn--0.0495 mg, Zn--0.0409 mg, Ni--0.0475 mg, Co--0.952 mg; before, or after irr.
- (3) 10 days after irr., changes in blood serum proteins of experimental rats less pronounced than in controls. (641) See also (640a).

VITAMIN P AND VINYLIN

White rats

- (2) Internally 0.4-1 ml and 5 mg, 5 days before, and during 30 days after irr. roentgen or gamma-rays 600 r or 750 r.
- (3) Mortality  $19.0 \pm 4.9\%$  and  $17.0 \pm 7.8\%$  respectively; in controls,  $55.7 \pm 5.0\%$  and  $70.0 \pm 7.8\%$ . (300)

VITAMIN C AND VITAMIN P

Rabbits, immunized with Breslau rod bacteria

- (2) I.V. 50 mg/kg vitamin C and 70 mg/kg vitamin P 30 min. before irr. of eye 800 r.
- (3) Protective effect absent. Criterion: permeability of hematoophthalmological barrier. (144)

## HELIUM AND ARGON

Beans *Vicia faba*

- (2) Germinating seeds irr. with various doses in a chamber containing 1 atm. of air, 2 atm. He, and 2 atm. Ar.
- (3) Relative radiosensitivity, determined by growth inhibition, decreased from 2.8 to 1.6. (457)

## HYALURONIC ACID AND VITAMIN P

Rabbits, immunized with Breslau rod bacteria

- (2) S.C. 50 mg hyaluronic acid, and I.V. 70-80 mg vitamin P, 24 hours before irr. of eyes 800-1600 r.
- (3) Permeability of hematoophthalmological barrier smaller than in controls. (144)

HYDERGINE, PANTEZINE, AND SANDOSTENE OF CALCIUM (MIXTURE M<sub>2</sub>)Rats

- (2) Hydergine 0.2 mg/kg, pantezine 5% 2 mg/kg, sandostene of calcium 3 mg/kg, administered 2 hours before, and 13 hours after irr. of rats; 1 hour before irr. rats burned with flame (5 x 6 cm). Subsequently, the mixture administered for 4 days, twice daily, then, once a day, until the end of investigations.
- (3) Therapy had negative effect on the course of burns in experimental animals. (571)

## HYDROXYLAMINE AND AET

White mice, male and female, weight 18-23 g

- (2) I.P. hydroxylamine 60 mg/kg, AET 150 mg/kg 5-10 min. before gamma-irr. Co<sup>60</sup>, or with protons, energy 660 Mev, dose 1500-1600 r.
- (3) Survival in the first experimental group, 81%; in the second, 87%; all controls died. (355) See also (522a).

## HYDROXYLAMINE AND GLUTATHIONE (reduced)

Rats

- (2) I.P. 60-75 mg/kg hydroxylamine and 900 mg/kg glutathione 5-15 min. before irr. 850-1000 r.
- (3) Survival 5%; all controls died. (522)

## HYDROXYLAMINE AND 5-METOXYTRYPTAMINE

White mice, male and female, weight 18-23 g

- (2) I.P. hydroxylamine 60 mg/kg 5-10 min. before irr.; 5-metoxtryptamine 75 mg/kg 20-30 min. before irr. with protons, energy 660 Mev, dose 1450 ± 50 r.
- (3) Survival 75%; all controls died. (355)

## HYDROXYAMINE, AMINOETHYLISOTHIURONIUM AND GLUTATHIONE

Rats

- (2) I.P. 5-15 min. in various combinations, before irr. 851-1000 r.
- (3) Protective effect additive. (522)

## HYDROXYLAMINE AND CYSTAMINE

White mice, male and female, weight 18-23 g

- (2) I.P. hydroxylamine 60 mg/kg 5-10 min. before irr., and cystamine 150 mg/kg 20-30 min. before irr. with protons, energy 660 Mev, dose 1550 r.
- (3) Survival 69%; all controls died. (355)

## HYDROXYLAMINE AND CYSTEINE

Rats

- (2) I.P. 60-75 mg/kg hydroxylamine and 1000 mg/kg cysteine 5-15 min. before irr. 850-1000 r.
- (3) Survival 95%; all controls died. (522)

## GLYCERINE AND DIMETHYLSULFOXIDE

Bacteria Pseudomonas sp.

- (2) 2 M glycerine and 1 M dimethylsulfoxide 3 min. before irr. in N<sub>2</sub>.
- (3) Protected against death with DRF=2.3. (402)

## GLYCERINE AND CYSTEAMINE

Bacteria Escherichia coli K 12 (lambda)

- (2) No entry.
- (3) Combination of glycerine and cysteamine did not intensify the protection showed by cysteamine alone. (634)

## GLYCERINE AND THIOUREA

Bacteria Pseudomonas sp.

- (2) 2 M glycerine and 0.2 M thiourea 3 min. before irr. in N<sub>2</sub>.
- (3) Protected against death with DRF=2.6. (402)

## GLYCERINE AND CYSTEAMINE

Human kidney cells (tissue culture)

- (2) 15% glycerine and 4 mM cysteamine 30-45 min. before irr. up to 5000 rad (344 r/min).
- (3) Protected against death with DRF=2.6. Each substance by itself protected with DRF=1.9. (803)

## GLYCERINE AND CYSTEINE

Bacteria Pseudomonas sp.

- (2) 0.1 M cysteine 20 min. before, and 2-molar glycerin 6 min. before irr. in N<sub>2</sub>.
- (3) Protected against death with DRF=2.5. (402)

## 1-GLUTAMIC ACID AND HYDROQUINONE

Rats with MTK-III sarcoma

- (2) No entry.
- (3) 1-glutamic acid weakened the effect of combined hydroquinone and radiation on mitosis in sarcomatous cells. (674)

## DIMEDROL AND SYNCOL

Dogs

- (2) Dimedrol 0.1 g/kg 10 min. after irr. 450 r, and burns. Syncol I.V. 10 ml/kg 2 hours after combined action.
- (3) 6 dogs survived out of 6; in controls, 0. Period of observation--24 hours. (150)

## DIMETHYLSULFOXIDE AND S-beta-AMINOETHYLISOTHIURONIUM Br·HBr (AET)

Mice, female

- (2) I.P. 4.5 g/kg dimethyl sulfoxide immediately before irr., and 250 mg/kg AET 30 min. before irr. 1007, 1100, 1200, 1300, 1400 r.
- (3) Survival corresponding to doses of irr., 100, 94, 74, 77, and 0%. (370)

## DIMETHYLSULFOXIDE AND CYSTEAMINE

Mice, female

- (2) I.P. 4.5 g/kg dimethylsulfoxide immediately before irr., and 175 mg/kg cysteamine 30 min. before irr. 1300 and 1400 r.
- (3) Survival 55 and 0%. (370)

## DIMETHYLSULFOXIDE AND THIOUREA

Bacteria Pseudomonas sp.

- (2) 1 M dimethylsulfoxide and 0.2-molar thiourea 6 min. in N<sub>2</sub>.
- (3) Protected against death with DRF=2.4. (402)

## DIETHYLAMIDE OF D-LYSERGIC ACID AND 5-OXYTRYPTAMINE

Rats

- (2) I.P. 5 min. before irr. 1000 r.
- (3) Antiradiation effect of 5-oxytryptamine sharply decreased in this combination. (787)

## ZYMOSAN AND N-PHENYLAMIDINETHIOPHEN -1-2-CARBOXYLIC ACID (NTA)

White rats, weight 190-220 g

- (2) I.P. zymosan 100 mg/kg 24 hours before irr., and NTA 60 mg/kg 10-15 min. before irr. 720 r.
- (3) By 30th day after irr., 5 animals survived out of 40; in controls, 2. (218)

## ISOPROPYLHYDRAZIDE OF ISONICOTINIC ACID (marsilid) and TRYPTAMINE

No entry

- (2) No entry.
- (3) Marsilid decreased the protective effect of tryptamine 50%. (107)

## INDOLE AND ACETYLCHOLINE

White mice, weight 18-20 g

- (2) S.C. 2 mg/mouse indole and 1.5 mg/mouse acetylcholine 5-10 min. before gamma-irr. Co<sup>60</sup> 1050 r.
- (3) Survival 17%; all controls died. (289)

## INOSINE AND FRUCTOSO-1,6-DIPHOSPHATE

White mice

- (2) I.P. with irr. 800 r.
- (3) Survival 10%; observations of few months duration. (366)

## IPRONIAZIDE AND RESERPINE

White mice, weight 18-20 g

- (2) S.C. 100 mg/kg iproniazide 22, 34, or 48 hours before irr., and 2 mg/kg reserpine 2, 12, or 24 hours before irr. 700 r.
- (3) Protective effect absent. (108)

## CATECHINS, FROM TEA LEAVES, AND ASCORBIC ACID

Rabbits

- (2) Internally 50 mg catechins daily, 30 days before, or after irr. 800, 1000, and 1200 r (23-25 r/min).
- (3) With doses 800 and 1000 r, lighter course of radiation sickness, and lower capillary permeability. (24)

## OXYGEN AND CARBON DIOXIDE

White rats, male, weight 180-220 g

- (2) S.C. 5 ml mixture 95% oxygen and 5% carbon dioxide 3 times per week, during the whole period of irr. Irr. conducted 6 times a week, 20 r each dose, up to total dose 1220 r (31-32 r/min).
- (3) Erythrocyte content and especially thrombocytes remained close to the initial level in experimental animals. (81)

## CORTISONE AND SODIUM LACTATE

Dogs, rabbits

- (2) Parenterally after irr. 450 r, for dogs, and 850 r for rabbits.
- (3) Benevolent effect on the general well being of experimental animals. (317)

## BONE MARROW AND DIMEDROL

Dogs

- (2) Intraosseously (from 94 mln to 14 mlrd of nucleated elements) from puppies, on 4th day after irr. I.M. dimedrol 1.5-2 ml 2% solution daily. Starting from 2nd day after irr. for the duration of 10-12 days. Irr. dose 600 r.
- (3) Out of 8 dogs, 4 survived; out of 5 receiving only bone marrow, 2 survived; all controls died. (142)

## BONE MARROW AND COMPLEX THERAPY (transfusions of blood and plasma, vitamins, antibiotics, dimedrol)

Dogs, weight 7-8 kg

- (2) Intraosseously suspension of 200-300 mln cells 24 hours after, or on the 3rd day after irr. 450 r.
- (3) 15 dogs survived out of 17; out of 23 controls, 3 survived; out of 19 dogs treated without administration of bone marrow, 11 survived. (236)

## BONE MARROW AND SPLEEN, BOTH HOMOLOGOUS

Pigs

- (2) I.V. and I.P. after gamma-and neutron irr. in nuclear test in Nevada (USA); suspension of bone marrow cells ( $3-4 \times 10^9$  cells) and of spleen.
- (3) Therapeutic effect absent. (453)

## HOMOLOGOUS BONE MARROW AND CHLORTETRACYCLINE

White rats, male, weight 160-210

- (2) I.V. bone marrow  $2.3-2.06 \times 10^7$  nucleated elements per rat, 2.5 hours after, or on the 1st, 2nd, and 3rd day after gamma-irr. 750 r. Chlortetracycline internally, 3 mg/rat twice a day during 10 days after irr.
- (3) Survival increased 34.2-52.5%. (279)

## LEUKOGEN AND ONONIS ARVENSIS

White rats, male, weight 150-170 g

- (2) Leukogen--0.2, ononis arvensis (decoction)--5 ml added to rat food (calculating 5 ml per 6 animals). Fed during 6 days after irr. 700 r (36 r/min).
- (3) By 14th day after irr., survival 66.6%; in controls, 33.3%. (351)



## beta-MERCAPTOPROPYLAMINE, SODIUM NITRATE, AND BIOMYCIN

Dogs, male

- (2) S.C. MPA 100 mg/kg in conjunction with sodium nitrate before irr. 700 and 800 r. After irr. experimental animals received biomydin.
- (3) With irr. 700 r, out of 5 controls 4 dogs died; 5 experimental dogs survived. With irr. 800 r, 3 dogs survived out of 5; all controls died. (267)

## p-MERCAPTOPROPYLAMINE (MPA) AND BIOMYCIN

Dogs, male, weight 9-21 kg

- (2) S.C. MPA before irr., biomydin internally during 30 days after irr. 700 r.
- (3) All experimental dogs (5) survived; all controls (5) died. (267)

## 2-MERCAPTOETHYLWANIDINE (MEG) AND bis-2-GUANIDOETHYLDISULFIDE (GED)

Mice, male, C<sub>57</sub> BL/6 line, 10 weeks old

- (2) I.P. 100 mg/kg 10-15 min. before irr.
- (3) LD<sub>50</sub> in experiment 1121 r; in controls 799 r. (738)

## METACYL AND CHLORTETRACYCLINE

White mice, rats, rabbits

- (2) Therapeutic application in severe form of radiation sickness.
- (3) Positive effect surpassing results obtained when chlortetracycline used by itself. Administration of metacyl alone aggravated the course of radiation sickness. (87)

## METHYLAMINE AND ACETYLCHOLINE

White mice, weight 18-20 g

- (2) S.C. 2 mg/mouse methylamine and 1.5 mg/mouse acetylcholine 5-10 min. before gamma-irr. 1050 r.
- (3) Survival 24%; all controls died. (289)

## alpha-METHYLTRYPTAMINE AND 5-OXYTRYPTOPHAN

White mice

- (2) I.P. methyltryptamine 12.5 mg/kg 4 hours before irr., 5-oxytryptophan 250 mg/kg 1 hour before irr. 700 r.
- (3) Survival 25%; all controls died. (112)

## alpha-METHYLTRYPTAMINE AND TRYPTAMINE

- (2) No entry.
- (3) alpha-methyltryptamine completely deleted protective action of tryptamine. This effect absent when alpha-methyltryptamine administered 4 hours after tryptamine. (107)

## 5-METOXYTRYPTAMINE AND DESERIL

White mice, weight 17 g

- (2) I.P. 50 mg/kg 5-metoxytryptamine 5 min. before irr., S. C. 10 mg/kg deseril 30 min. before irr. 750 and 900 r.
- (3) Survival corresponding to irr. doses: 5 and 5%; in controls, 25 and 2.5%. (454)

## 5-METOXYTRYPTAMINE AND IPROMAZIDE

White mice, weight 17 g

- (2) I.P. 50 mg/kg 5-metoxytryptamine 30 min. before irr., and 200 mg/kg ipromazide 21 hours before irr. 900 r.
- (3) Survival in experimental group: 35%; in controls, 2.5%. (454)

## 5-METOXYTRYPTAMINE AND MERCAMINE

White mice, weight 18-22 g

- (2) I.P. 75 and 150 mg/kg, respectively, also 50 and 100 mg/kg before irr. 700 r.
- (3) Survival 92 and 72.5%; all controls died. (155)

White mice, male and female, weight 18-23 g

- (2) I.P. 5-metoxytryptamine 75 mg/kg 20-30 min. before irr., mercamine 150 mg/kg 5-10 min. before gamma-irr. Co<sup>60</sup> 850 r, or before irr. with protons, energy 660 Mev, dose 1300 and 1550 r.
- (3) Survival in experimental groups 95, 45, 73%; all controls died. (355)

White rats, weight 150-200 g

- (2) I.P. 15 mg/kg and 100 mg/kg before irr. 800 r.
- (3) Survival 86.6%; in controls, 6.6%. (155)

Mice

- (2) Before irr. 700 r.
- (3) Protected blood forming tissue (decreased number of degenerative cells of blood forming organs). (170)

## 5-METOXYTRYPTAMINE AND beta-MERCAPTOPROPYLAMINE

White mice, weight 18-22 g

- (2) I.P. 75 and 150 mg/kg respectively before irr. 1000 r.
- (3) Survival 25%; all controls died. (155)

## 5-METOXYTRYPTAMINE AND CYSTAMINE

Mice

- (2) Before irr.
- (3) Pronounced protective effect. (110)

## TRACE ELEMENTS (MIXTURE OF CHLORIDES OF MAGNESIUM, COPPER, NICKEL, AND ZINC)

Rats

- (2) I.P.  $MgCl_2$ --30.499 mg,  $CuCl_2$ --0.436 mg,  $NiCl_2$ --0.0475 mg,  $ZnCl_2$ --0.0409 mg, daily, for 5 days before irr. 800 r.
- (3) Inhibition of aldolase and dehydrogenase of glucoso-6-phosphate, and of lactic and malic acid in erythrocytes of experimental animals was less pronounced. (463a)

## MILK, ACIDOPHILUS-YEAST, AND CHEESE, ACIDOPHILUS-YEAST

Rats

- (2) 10 days before and after irr. until the end of experiment, irr. 550 r.
- (3) Survival 56.6%; in control, 23.3%. (26)

## MORPHINE AND URETHANE

Dogs

- (2) Morphine 0.08-0.1 g/kg, urethane 0.8-1.0 g/kg before irr. of cerebellum 900 r.
- (3) Disorders of cerebellum absent in experimental animals. Disorders of cerebellum, due to radiation injury, absent in experimental animals. (191)

## NAPHTHALAN SALVE, PENICILLIN, AND ALOE EXTRACT

Rats, weight 170-230 g

- (2) 20% naphthalan salve applied daily to infected skin and muscle wounds, inflicted on the 5th day after general irr. 400 r. Penicillin administered I.M. 1500 units, aloe extract--S.C. 0.5 ml.
- (3) Increased survival; accelerated healing. (1)

## NEMBUTAL AND ALINAMIN (thiamine-propyldisulfide)

Guinea pigs

- (2) Internally nembutal 30 mg/kg and alinamin 2 mg/kg 30 min. before irr. of cerebellum.
- (3) Vitamin  $B_1$  content of irr. nerve tissue increased on the average 35% in comparison to unprotected controls. (192)

NEMBUTAL AND VITAMIN  $B_1$ Guinea pigs

- (2) Parenterally 30 mg/kg nembutal, 2 mg/kg vitamin  $B_1$ , 2 days before, and again 30 min. before irr. of cerebellum 9000 r.
- (3) Smaller decrease of vitamin  $B_1$  content of cerebellum; decreased pathological changes in cerebellum. (192)

## SODIUM NITRATE AND OXYGEN

White mice, male and female, weight 18-20 g,  
8-12 weeks old

- (2) S.C. 3.5 mg/mouse 45 min. before gamma-irr. Co<sup>60</sup> 700 r (280 r/min) 98-99%, or 21% O<sub>2</sub>.
- (3) Survival 29.9, and 45.2%; in controls, 12.7, and 10.7%. (85)

## OXIDE OF NITROGEN AND CYSTEINE

Bacteria Shigella sonnei

- (2) 1 mM NO bubbled through 60-70 min., then 1 mM cysteine added; irradiated immediately with doses up to 25 kr (3000 rad/min).
- (3) Completely deleted sensitizing effect of NO; survival somewhat higher than with irr. in N<sub>2</sub>. (620)

## CYTOCHROME C AND CARBON MONOXIDE

White rats, male, weight 150-180 g

- (2) Carbon dioxide inhaled at the moment of irr. (COHb:50-60%), cytochrome C I.P., 8 mg/kg 15 min. before irr. 750 r (40 r/min).
- (3) Cytochrome C had no effect on the prophylactic action of carbon monoxide. (314)

OXYTETRACYCLINE, STREPTOMYCIN, PHENOXYMETHYLPENICILLIN, AND VITAMINS C, B<sub>1</sub>, AND B<sub>2</sub>

Dogs

- (2) Internally, oxytetracycline 200-300 mg, streptomycin--200,000-300,000 units, phenoxymethylpenicillin--200,000-300,000 units, from the 2nd to the 20th day after irr., twice a day after gamma-irr. Vitamins, once a day, in doses: C--300-600 mg, B<sub>1</sub>--100 mg, B<sub>2</sub>--0.5-1.0 mg. Irr. dose 300-350 r.
- (3) 9 dogs survived out of 17; out of 17 controls, 0. (251)

## 5-OXYTRYPTAMINE AND ATROPINE

Rats

- (2) I.P. 5 min. before irr. 1000 r.
- (3) Antiradiation effect of 5-oxytryptamine increased slightly. (787)

## 5-OXYTRYPTAMINE AND ADENOSINE

White rats, female

- (2) I.P. before irr. 590-1100 r.
- (3) Weak protective effect. (607a)

## 5-OXYTRYPTAMINE (5-HT) AND ADENOSINMONOPHOSPHATE (AMP)

Mice

- (2) 5-HT--1 mg/mouse 15 min. before irr.; AMP--3.5 mg/mouse 5 min. before irr.

- (3) LD<sub>50</sub> in controls--612 r; in experimental group--1246 r. (605)

## 5-OXYTRYPTAMINE AND 2-ADENOSINMONOPHOSPHATE

White rats, female

- (2) I.P. before irr. 950-1100 r.

- (3) Pronounced protective effect. (607a)

## 5-OXYTRYPTAMINE AND 3-ADENOSINMONOPHOSPHATE

White rats, female

- (2) I.P. before irr. 950-1100 r.

- (3) Protective effect less than with the combination 5-HT and 2 AMP. (607a)

## 5-OXYTRYPTAMINE AND ADENOSINTRIPHOSPHATE (ATP)

Mice

- (2) 5-HT 1 mg/mouse 15 min. before irr., ATP 3.5 mg/mouse 5 min. before irr.

- (3) LD<sub>50</sub> 612 r in controls; in experimental group, 1213 r. (603)

## 5-OXYTRYPTAMINE AND 3-beta-AMINOETHYLISOTHIURONIUM (AET)

Mice

- (2) I.P. 5 mM 5-HT, 10 mM AET 7-10 min. before irr. 800 and 1100 r.

- (3) Survival with dose 800 r--100%; with dose 1100r--70-80%; all controls died from 650 r dose. (806)

Mice

- (2) 5-HT, 5mM; AET, 10 mM before irr. 800 and 1100 r.

- (3) Survival in experimental groups, irradiated with doses 800 and 1100 r was 100 and 70-80% respectively. (807)

## 5-OXYTRYPTAMINE, 2-AMINOETHYLISOTHIURONIUM (AET) AND MERCAPTO-ETHYLAMINE (MEA)

Mice, female, C<sub>3</sub>H, weight 20-25 g, 100-150 days old

- (2) 5-HT, 0.35 mg; AET, 0.85 mg; MEA, 2 mg before irr. with various doses (150 r/min).

- (3) LD<sub>50/30</sub> in controls, 680; in experiment, 1500 r. (485)

## 5-OXYTRYPTAMINE, AET, MEA, AND ISOLOGOUS BONE MARROW

Mice, female, C<sub>3</sub>H, weight 20-25 g,  
100-150 days old

- (2) Before irr. 5-HT 0.35 mg, AET 0.85 mg, MEA 2 mg,  $6 \times 10^6$  bone marrow cells administered 4 hours after irr. (150 r/min).
- (3) LD<sub>50/30</sub> in controls--650 r; in experiment--2500 r. (485)

## 5-OXYTRYPTAMINE AND ACETYLCHOLINE

White mice, weight 18-20 g

- (2) S.C. 0.3 mg/mouse 5-HT and 1.5 mg/mouse acetylcholine, 5-10 min. before irr. 700 r, or gamma-irr. 1050, 1150, and 1300 r.
- (3) Survival with roentgen irr. 58%, under gamma-irr. corresponding to doses 70, 35, and 11%. All controls died. (289)

## 5-OXYTRYPTAMINE AND DESERIL

White mice, weight 17 g

- (2) I.P. 5-HT 5 min. before irr. and S.C. 10 mg/kg deseril 30 min. before irr. 750 and 900 r. T.N.--no dose given for 5-HT
- (3) Protective effect absent. (454)

## 5-OXYTRYPTAMINE AND DIBENZAMINE

Rats

- (2) I.P. 5 min. before irr. 1000 r.
- (3) Antiradiation effect of 5-HT decreased sharply. (787)

5-OXYTRYPTAMINE AND DIETHYLAMIDE OF  $\alpha$ -LYSERGIC ACID BROM DERIVATIVE (BOL-148)

Rats

- (2) I.P. 5-HT ( $0.5 \times 10^{-5}$  M) and BOL-148 ( $3 \times 10^{-7}$  M) 5-10 min. before irr. 1000 r.
- (3) Protective effect absent. (786)

Black mice, C<sub>57</sub>, weight 5 g, 8 days old

- (2) S.C. 17 gamma 5-HT, and I.P. BOL-148--5 gamma; S.C., 20 gamma 30 min. before irr. 550 r.
- (3) Epilatory effect of radiation was the same in experimental and control animals. (710)

## 5-OXYTRYPTAMINE AND IPRONIAZIDE (marsilid-phosphate)

White mice, weight 17 g

- (2) I.P. 50 mg/kg 5-HT 30 min. before irr., and 200 mg/kg iproniazide before irr. 900 r.
- (3) Survival 85%; in controls, 2.5%. (454)

## 5-OXYTRYPTAMINE AND MEPIRAMINE

Mice

- (2) I.P. 5 min. before irr. 1000 r.
- (3) Antiradiation effect of 5-HT did not change in this combination. (787)

## 5-OXYTRYPTAMINE AND MERCAPTOETHYLAMINE (MEA)

No entry

- (2) 5-HT 5 mM, MEA 30 mM before irr. 800-1100 r.
- (3) Survival with irr. 800 and 1100 r, 100 and 70-80% respectively. (807)

## 5-OXYTRYPTAMINE AND alpha-METHYLTRYPTAMINE

White mice

- (2) I.P. 5-HT 50 mg/kg 10-15 min. before irr. alpha-methyl-tryptamine 12.5 mg/kg 4 hours before irr. 700 r.
- (3) Survival 12.5%, all controls died. (112)

## 5-OXYTRYPTAMINE AND 1-benzyl-2-methyl-3-(2-aminoethyl)-5-methoxy-indole hydrochloride

Rats

- (2) I.P. 5 min. before irr. 1000 r.
- (3) Antiradiation effect of 5-HT sharply reduced in this combination. (787)

## 5-OXYTRYPTOPHAN AND ADENOSINTRIPHOSPHATE (ATP)

Mice, inbred strain, weight 20g

- (2) I.P. 20 mg/kg 5-oxytryptophan 1 hour before irr., and 5 mg/kg ATP 5 min. before irr. 810 r.
- (3) Survival 48%; in controls, 4%. (603)

## OROTIC ACID, FOLIC ACID, ASCORBIC ACID, CITRIN AND PENICILLIN

Guinea pigs

- (2) Therapeutic agents administered daily for the duration of the whole period of irr. Irr. 10 r per day, total dose 600 r.
- (3) Survival 30-50% higher than in controls. (47)

## PANTOTHENIC ACID AND beta-MERCAPTOETHYLAMINE

Mice

- (2) No entry.
- (3) (512).

## PENICILLIN AND STREPTOMYCIN

Monkeys Macaca mulatta

(2) No entry.

(3) (697).

PENICILLIN, STREPTOMYCIN, LEVOMYCETIN, CALCIUM GLUCONATE, AND VITAMIN COMPLEX

Dogs

(2) I.M. 100,000 units penicillin; internally and I.M. 50,000 units streptomycin; internally 0.1 levomycetin from the 1st to 20th day after gamma-irr., twice a day. During the same period I.V. calcium gluconate 10 ml 10% solution; internally vitamin C (0.6g), vitamin B<sub>2</sub> (20 mg), vitamin B<sub>1</sub> (1 mg) once a day. Irr. dose 350 r.

(3) 5 dogs survived out of 10; all controls died. (253)

PENTOXYL AND PENICILLIN

Rabbits

(2) I.M. penicillin 10,000 units; internally pentoxyl 50 mg/kg daily after irr. Irr. dose 1000 r (19 r/min). After irr. wounds inflicted on experimental and control rabbits (2 wounds per animal).

(3) Benevolent effect on the course of radiation disease, on regenerative processes in the wounds, and scar formation. (53)

PYRIDOXAL-5-PHOSPHATE AND ADENOSINMONOPHOSPHATE (AMP)

Mice

(2) Pyridoxal-5-phosphate 10 mg/mouse 15 min. before irr.; AMP--75 mg/mouse 5 min. before irr.

(3) LD<sub>50</sub> in controls, 612 r; in experiment--1039 r. (605)

PYRIDOXAL-5-PHOSPHATE AND ADENOSINTRIPHOSPHATE (ATP)

Mice, inbred strain, weight 20 g

(2) I.P. pyridoxal-5-phosphate 10 mg/mouse 15 min. before irr.; ATP-3.5 mg/mouse 5 min. before irr. 810 r.

(3) Survival 82%; in controls, 4%. (603)

Mice

(2) I.P. pyridoxal-5-phosphate 10 mg/mouse 15 min. before irr.; ATP 3.5 mg/mouse 5 min. before irr.

(3) LD<sub>50</sub> in controls 612 r; in experiment--970 r. (605)

POLYCHLORETHYLPHOSPHATE AND LICOPEN

Mice

(2) I.P. 0.5-2 mg polychlorethylphosphate 24 hours before irr., and 50-100 mg licopen 30 min. after irr. 700-750 r.

(3) Survival 68%; in controls, 10%. (475)



PROMETHAZINE, MEPYRAMINE, AND MIXTURE OF AMINO ACIDS

Mice

- (2) 15-30 min. before irr. 500 r.
- (3) Insignificant effect observed. (781)

PROPERDIN AND NUCLEPROTEID (nuclei of bone marrow cells of large cattle embryos)

White mice

- (2) Properdin 0.1 ml (50 units) on the 2nd and 7th day after irr.; nucleproteid 0.1 ml on the 3rd day after irr. 750 r.
- (3) Survival 26% higher than in controls. (228)

YEAST RIBONUCLEIC ACID AND BIOTIN

Guinea pigs, weight 300 g

- (2) I.P. RNA and biotin after irr. 100-200 r.
- (3) Decrease of RNA content of bone marrow less pronounced. (752)

SELACHYL ALCOHOL, ANTIBIOTICS, AND COFERID

Dogs

- (2) Selachyl alcohol administered 10 mg twice a day during the first 3-4 weeks after irr. 600 r.
- (3) Mortality 35-40%; in controls--80%. (280)

SYNKAVIT AND CYSTEAMINE

Mice

- (2) 15 min. before irr. 600 r.
- (3) Synkavit counteracted antiradiation effect of cysteamine. Criterion: DNA level in small intestine. (688)

SYNKOL, SYNTOMYCIN, PENICILLIN, AND STREPTOMYCIN

Dogs

- (2) I.V. synkol 20-25 mg/kg 1, 5, 24, and 48 hours after irr. 450 r. Syntomycin twice a day from the 3rd to 28th day after irr. Penicillin and streptomycin--in case of fever.
- (3) 11 dogs survived out of 13; in controls--out of 11 dogs, one survived. (235)

SYNKOL, ASCORBIC ACID, GLUCOSE, VITAMINS B<sub>1</sub>, B<sub>6</sub>, C, B<sub>2</sub>, P, K, SYNTOMYCIN, PENICILLIN, STREPTOMYCIN, REDUCED IRON

Dogs

- (2) At various times after irr. 450 r.
- (3) 13 dogs survived out of 15; out of 11 controls 1 dog survived. (235)

MIXTURE OF TWO MERCAPTANS---METHHEMOGLOBIN-FORMING and  
CYTOCHROMOXIDASE-INHIBITING

Dogs, 27 months old

- (2) I.V. before irr. 775 and 1500 r.
- (3) With irr. 775 r, by 60th day after irr. 23 experimental.....  
dogs remained alive; with this dose, 95 controls died.  
With 1500 r dose, survival in experiment--7%; all controls  
died. (550)

STELLINSULFATE AND L-CYSTEINE

Rats

- (2) Stellin 100 mg/kg, l-cysteine 500 mg/kg before gamma-irr.  
Co<sup>60</sup> 700 r.
- (3) Survival 70%; all controls died. (267)

STELLINHYDROCHLORIDE AND L-CYSTEINE

Rats

- (2) Stellin 100 mg/kg, l-cysteine 500 mg/kg before gamma-irr.  
Co<sup>60</sup> 700 r.
- (3) Survival 80%; all controls died. (267)

STELLINASCORBINATE AND L-CYSTEINE

Rats

- (2) Stellin 150 mg/kg, l-cysteine 500 mg/kg before gamma-irr.  
Co<sup>60</sup> 700 r.
- (3) Survival 80%; all controls died. (267)

STREPTOMYCIN, ADRENALIN, AND ACETYLCHOLINE

White mice, male and female, weight 18-22 g

- (2) S.C. 2 mg streptomycin, 12.5 mkg adrenalin, and 1.5 mg  
acetylcholine 5 min. before gamma-irr. 1000 r.
- (3) By 30th day after irr., 18 mice survived out of 136; all  
controls (320 mice) died. (291)

STREPTOMYCIN AND beta-MERCAPTOETHYLAMINE

White mice, male and female, weight 18-22 g

- (2) S.C. 2 mg/mouse streptomycin, and 3 mg/mouse beta-  
mercaptoethylamine 5 min. before gamma-irr. 1100 r.
- (3) By 30th day after irr. 26 mice survived out of 240; all  
controls (320 mice) died. (291)

STREPTOMYCIN AND PENICILLIN

Rats

- (2) I.M. up to 5000 units in 0.5% novocaine daily after gamma-  
irr. 400-800 r.

- (3) Smaller increase in tissue sorption properties. (99)

**STREPTOMYCIN, PENICILLIN, LEVOMYCETIN, ASCORBIC ACID, CALCIUM GLUCONATE**

Monkeys (Macaca), 1½-2 years old

- (2) Twice a day streptomycin 50,000 units, penicillin 10,000 units, streptomycin 50,000 units (sic) and levomycetin 0.25 g orally; once a day I.M. 0.1 g ascorbic acid, 0.5 ml 5% vitamin B<sub>1</sub> solution, and I.V., 5 ml 10% calcium gluconate. Multiple irr. with gamma-rays Co<sup>60</sup> 25.2-26.34 r per day, during 43-48 days. Therapy started from the moment when irr. dose reached 650 r.
- (3) 7 monkeys survived out of 9; out of 10 controls, 1 monkey survived. (97)

**STREPTOMYCIN, PENICILLIN, AND TRANSFUSION OF SUSPENSION OF FRESH BLOOD CORPUSCLES**

Rats, male and female, Wistar line, weight 200-300 g

- (2) I.M. 20 mg streptomycin and 24,000 units/rat penicillin, daily, during 20-24 days after irr., starting from 4-5th day after irr. I.V., 2-4 ml suspension of fresh blood corpuscles, daily, from 6-9th day to 15-20th day after irr. Irr. doses for males 580, 630, and 660 r; for females 600 r.
- (3) Survival corresponding to irr. doses 88, 34, 46, and 65%; in controls antibiotics only--54, 19, 15, and 50%. (734)

**TERRAMYCIN, PHENOXYMETHYLPENICILLIN, STREPTOMYCIN, ASCORBIC ACID, THIAMINE, AND RIBOFLAVIN**

Dogs, without lineage, weight 15-25 kg

- (2) Internally during 20 days after gamma-irr. 350 r, 20,000 un. each: terramycin, phenoxymethylpenicillin, and streptomycin; ascorbic acid, 600 mg; thiamine 10 mg; riboflavin, 0.5 mg.
- (3) Therapeutic effect absent. (269)

**TRYPTAMINE AND ACETYLCHOLINE**

White mice, weight 18-20 g

- (2) S.C. 1.5 mg/mouse tryptamine, and 1.5 mg/mouse acetylcholine 5-10 min. before irr. 700 r, or gamma-irr. 1050 r.
- (3) Survival 54 and 64%; all controls died. (289) See also (290).

**TRYPTAMINE AND DIETHYLAMIDE D-LYSERGIC ACID BROM DERIVATIVE (BOL-148)**

Black mice, C<sub>57</sub>, weight 5 g, 8 days old

- (2) S.C. tryptamine 62 gamma and I.P. BOL--5 gamma 30 min. before irr. 550 r.
- (3) Epilatory effect of radiation was the same in experimental and control animals. (710)

## TRYPTAMINE HYDROCHLORIDE AND PYRIDOXYL-5-PHOSPHATE

White mice

(2) I.P. tryptamine 100 mg/kg, pyridoxal-5-phosphate 10 mg/mouse 15-10 min. before irr. 700 r.

(3) Survival 40.6%; all controls died. (112)

## TRYPTOPHAN AND ACETYLCHOLINE

White mice, weight 18-20 g

(2) S.C. 2 mg/mouse tryptophan and 1.5 mg/mouse acetylcholine 5-10 min. before irr. 700 r.

(3) Survival 114% (sic); all controls died. (289)

## UNITHIOL AND PHENATINE

Dogs

(2) I.P. 50 mg/kg unithiol and 0.1 mg/kg phenatine 30 min. before irr.

(3) Decreased absorption of glycocoll and glycochole  $\sqrt{T.N.}$  glucose? from intestines in comparison with controls. (214)

## URACIL AND ANTIPHEIN

Rats

(2) Uracil--100 mg/kg, antiphein--100 mg/kg.

(3) Uracil decreased protective effect of antiphein. (305a)

## PHENERGAN AND HISTAMINE

Black mice, C<sub>57</sub>, weight 5 g, 8 days old

(2) S.C. histamine 1.1 mg/mouse, phenergan 5 mg/ I.P., and S.C., 20 mg 30 min. before irr. 550 r.

(3) Epilatory effect of radiation in experimental and control animals. (710)

## PHENOXYMETHYLPENICILLIN, STREPTOMYCIN, LEVOMYCETIN, CALCIUM GLUCONATE, AND VITAMIN COMPLEX

Dogs, weight 10-18 kg

(2) Internally 100,000 units phenoxymethylpenicillin; 100,000 units streptomycin, 0.1 levomycetin twice a day from the 1st to 20th day after gamma-irr. 350 r. Internally during the same period 0.5 g calcium gluconate, 0.6 g vitamin C, 20 mg vitamin B<sub>2</sub>, 1 mg vitamin B<sub>1</sub>, all once a day.

(3) 3 dogs survived out of 10; all controls died. (253)

## FOLIC ACID, NICOTINIC ACID AND BEEF LIVER

Rats, dogs

(2) Added to food ration: folic acid--1 mg, nicotinic acid--150 mg.

(3) Lighter course of radiation disease. (106)

## FOLIC ACID AND STREPTOMYCIN

White mice

- (2) Folic acid administered in 0.2 ml physiological solution, 0.1 mg on alternate days, starting from the 4th and 8th day and until 30th day after irr. in conjunction with 1000 units of streptomycin; controls received only streptomycin according to the above scheme.
- (3) The course of radiation sickness more severe than in controls. (294)

## PENICILLIN, ALOE EXTRACT AND PINE SALVE

Rats

- (2) Salve applied daily on the infectious-skin-muscle wound, inflicted 5 days after irr. 400 r. Penicillin administered I.M. 1500 units, aloe extract-S.C. 0.5 ml.
- (3) Survival higher than in controls; time of wound healing close to healing period in non-irradiated animals. (1)

## CHLORPROMAZINE, PROMETAZINE, MEPIRAMIN, AND MIXTURE OF AMINO ACIDS

Mice

- (2) 15-30 min. before irr. 500 r.
- (3) Insignificant effect observed. (781)

## CHLORPROMAZINE AND MIXTURE OF AMINO ACIDS

Mice

- (2) 15-30 min. before irr. 500 r.
- (3) Increased length of life of experimental animals. (781)

## SODIUM CYANIDE AND 5-OXYTRYPTAMINE (5-HT)

Rats

- (2) I.P. sodium cyanide  $4 \times 10^{-5}$  M/rat and 5-HT  $0.5-0.75 \times 10^{-5}$  M/rat 5 min. before irr. 1000 r.
- (3) Antiradiation effect of 5-HT sharply reduced in this combination. (787)

## CYSTAMINE AND ANOXIA

No entry

- (2) No entry.
- (3) (792a).

CYSTAMINE, ANTIPHEIN, AND VITAMIN B<sub>6</sub>Rats

- (2) Cystamine 150 mg/kg before irr., antiphein 50 mg/kg after irr., vitamin B<sub>6</sub> during 7 days after irr.
- (3) Survival of experimental animals 60% higher than in controls. (305a)

## CYSTAMINE AND BATYL ALCOHOL

White rats, pregnant, 15th day of pregnancy

- (2) I.P. cystamine 65 mg/kg 15-30 min. before irr. 300 r. Batyl alcohol in butyric solution 0.5 mg/kg daily during 10 days after irr.
- (3) In experimental group peri-natal death 39.6% less than in controls. Among surviving infant rats the number of congenital brain and eye anomalies 2.3 times less than the number of anomalies present in the offspring of rats treated with batyl alcohol, or cystamine alone. (105)

## CYSTAMINE AND OXYGEN

White mice, male and female, weight 18-20 g, 8-12 weeks old

- (2) S.C. 5 mg/mouse 15 min. before gamma-irr. Co<sup>60</sup> 700 r (280 r/min) in 99%, or 21% O<sub>2</sub>.
- (3) Survival 32.4 and 39.3%; in controls, 12.7 and 10.7%. (85)

## CYSTAMINE HYDROCHLORIDE AND BIOMYCIN

Dogs, male and female, without lineage, weight 9.2-16.5 kg

- (2) Internally 50 mg/kg cystamine 1 hour before gamma-irr., 100 mg biomydin 2 times a day from 7th to 30th day after gamma-irr. 350 r.
- (3) One dog survived out of 10 experimental animals; all controls (10 dogs) died. (258)

## CYSTEAMINE, ADENOSINETRIPHOSPHORIC ACID (ATP)

Rats, weight 200-220 g

- (2) Cysteamine 150 mg/kg, ATP 150 mg/kg, before irr. 650 r (32/5 r/min).
- (3) Survival, 65%; in controls, 5%. (267)

## CYSTEAMINE AND SODIUM ARSENATE

Mice, female, Bagg-Swiss line, weight 20-25 g

- (2) I.P. cysteamine 75 mg/kg 15 min. before irr., sodium arsenate 12.5 mg/kg 24 hours before irr. 800 r.
- (3) Survival by 30th day after irr. 100%; all controls died by 21st day. (725)

## CYSTEAMINE AND GLYCERINE

Phage T-1

- (2) 10 min. in 0.15 molar cysteamine and in 13-molar glycerine in bouillon or H<sub>2</sub>O before irr. 3 Mr (500 kr/min).
- (3) Protection against death additive. DRF=6. (537)

## CYSTEAMINE AND CADMIUM CHLORIDE

## CYSTEAMINE AND URETHANE

Mice, female, Baggs-Swiss line,  
weight 20-22 g

- (2) I.P. cysteamine 75 mg/kg 15 min. before irr., urethane 1000 mg/kg 48 hours before irr. 800 r.
- (3) Survival by 30th day after irr. 90%; all controls died by 21st day. (725)

## CYSTEAMINE AND N-PHENYLAMINE-2-CARBOXYLIC ACID (NTA)

Rats, male, weight 180-230 g

- (2) I.P. cysteamine 100 mg/kg; NTA 60 mg/kg 10-15 min. before irr. 720 r.
- (3) Survival by 30th day after irr., 85%; in controls, 4%. (217)

## CYSTEAMINE AND ADRENALIN

Mice, female, Baggs-Swiss line,  
weight 20-22 g

- (2) I.P. cysteamine 75 mg/kg 15 min. before irr., adrenalin 2 mg/kg 24 hours before irr. 800 r.
- (3) Survival by 30th day after irr. 80%; all controls died by 21st day. (725)

## CYSTEAMINE BROMHYDRATE AND PYRIDOXAL-5-PHOSPHATE

White mice

- (2) I.P. cysteamine 175 mg/kg, pyridoxal-5-phosphate 10 mg/mouse 10-15 min. before irr. 700 r.
- (3) Survival 56.6%; all controls died. (112)

## CYSTEINE AND HYDROGEN PEROXIDE

Yeasts *Saccharomyces vini*, Megri strain 139 B

- (2) Cysteine  $10^{-3}$  M and  $\text{H}_2\text{O}_2$   $10^{-5}$  -  $10^{-1}$  M 15-20 min. before gamma-irr.  $\text{Co}^{60}$  30 kr.
- (3) Combination of cysteine with  $10^{-4}$  -  $10^{-5}$  M  $\text{H}_2\text{O}_2$  increased the protective effect. Combination of cysteine with  $10^{-3}$  M  $\text{H}_2\text{O}_2$  decreased survival of irradiated and non-irradiated cells. (50)

## CYSTEINE AND UREA PEROXIDE

Yeasts *Saccharomyces vini*, Megri strain 139 B

- (2) Cysteine  $10^{-3}$  M and urea peroxide  $10^{-5}$  -  $10^{-2}$  M 15-20 min. before gamma-irr.  $\text{Co}^{60}$  50 kr (400 r/min).
- (3) Combination of cysteine with  $10^{-5}$  M peroxide increased protective effect of cysteine. Survival increased from 67.7 to 84%. Combination of cysteine with  $10^{-3}$  M urea peroxide had no protective effect, sharply decreasing survival of irradiated and non-irradiated cells. (50)

Mice, female, Bagg-Swiss line  
weight 20-22 g

- (2) I.P. cysteamine 75 mg/kg 15 min. before irr., cadmium chloride 2.5 mg/kg 24 hours before irr. 800 r.
- (3) Survival by 30th day after irr. 70%; all controls died by 21st day. (725)

#### CYSTEAMINE AND OXYGEN

White mice, male and female, weight 18-20 g  
8-12 weeks old

- (2) S.C. 3 mg 15 min. before gamma-irr. Co<sup>60</sup> 700 r (280 r/min), in 98-99% O<sub>2</sub>, or 21% O<sub>2</sub>.
- (3) Survival 31.8 and 32.8% respectively; in controls, 10.7 and 12.7%. (85)

#### CYSTEAMINE AND KOLTSEMID

Mice, female, Bagg-Swiss line,  
weight 20-25 g

- (2) I.P. cysteamine 75 mg/kg 15 min. before irr., koltsemid 50 mg/kg 1, 12 and 48 hours before irr. 800 r.
- (3) Survival by 30th day after irr. 100, 30, and 100% respectively; all controls died by 21st day. (725)

#### CYSTEAMINE AND CORTISONE

Mice, female, Bagg-Swiss line,  
weight 20-22 g

- (2) I.P. cysteamine 75 mg/kg 15 min. before irr., cortisone 20 mg/kg 48 hours before irr. 800 r.
- (3) Survival by 30th day after irr., 30%; all controls died by 21st day. (725)

#### CYSTEAMINE AND STREPTOMYCIN

White mice, male and female, weight 18-22 g

- (2) S.C. cysteamine 3 mg/mouse 5 min. before gamma-irr., streptomycin 2 mg/mouse 24, 48, and 72 hours after gamma-irr. 1050 r.
- (3) By 30th day after irr., 32 mice survived out of 90; all controls (110 mice) died. (291)

#### CYSTEAMINE AND TYPHOID-PARATYPHOID VACCINE

Mice, female, Bagg-Swiss line,  
weight 20-22 g

- (2) I.P. cysteamine 75 mg/kg 15 min. before irr., typhoid-paratyphoid vaccine 0.5 mg/mouse 24 hours before irr. 800 r.
- (3) Survival by 30th day after irr., 100%; all controls died by 21st day. (725)



## CYSTEINE AND THIOUREA

Bacteria Pseudomonas sp.

- (2) 0.1-molar cysteine 20 min., and 0.2-molar thiourea 6 min. before irr. in  $N_2$ .
- (3) Protected against death with DRF=2.2. (402)

## CYSTEINE AND SODIUM CYANIDE OR POTASSIUM CYANIDE

Seeds Arabidopsis Thaliana,  
Lepidium sativum

- (2) Seeds moistened 2 hours in  $3 \times 10^{-5}$  g/ml KCN, or in  $5 \times 10^{-4}$  g/ml, in conjunction with  $10^{-3}$  g/ml cysteine, then dried out to initial weight and irr. 400,000 r (2700 r/min).
- (3) Did not protect against inhibition of germination. (716)

## ETHYLAMINE AND ACETYLCHOLINE

White mice, weight 18-20 g

- (2) S.C. 1.5 mg/mouse ethylamine and 1.5 mg/mouse acetylcholine 5-10 min. before gamma-irr. 1050 r.
- (3) Survival 25%; all controls died. (289)

## N-ETHYLMALIMIDE AND CYSTEINE

Bacteria Shigella sonnei

- (2) 0.2 mM N-ethylmalimide 30 min. before irr., and 0.2 mM cysteine immediately before irr. with doses up to 25 krad (3000 rad/min).
- (3) Cysteine completely removed sensitizing effect of N-ethylmalimide. Survival higher than in controls. (620)

Bacteria Escherichia coli

- (2) 0.0005 M N-ethylmalimide during 10 min., then cysteine 5 min. before gamma-irr.  $Co^{60}$  30 krad in  $N_2$  (300 krad/hour).
- (3) Cysteine completely removed sensitizing effect of N-ethylmalimide. (404)

## SUCCINIC ACID AND MALONIC ACID

Rats with MTK-III sarcoma

- (2) No entry.
- (3) (480).

### SECTION III

#### CLINICAL USE OF SOME ANTI-RADIATION AGENTS

##### ADENINE

###### Patients undergoing roentgen therapy of tumors

- (2) I.V. 30-60 mg daily; I.M. 20 mg daily; internally 60 mg daily.
- (3) Good results in 72% of the first group, in 67% of the second group, and in 57% of the third. (639)

###### Patients under roentgen therapy for uterine cervix carcinoma

- (2) 50 mg daily, total dose of radiation 4000-5000 r.
- (3) Preparation did not prevent the development of leukopenia, but did promote more rapid regeneration of blood proteins. (763)

###### Oncological patients

- (2) 20-60 mg daily after roentgen therapy or after the development of leukopenia.
- (3) In 3 weeks after the start of therapy, blood lymphocyte content normalized. (222a)

ADEPTOLON (mixture of 2 mg prednisolone and 15 mg antihistamine preparations-brombenzylpyridyl-methyl-ethyl-ethylendiaminomaleinate)

###### Patients under roentgen therapy

- (2) 3-6 times daily for 1-3 days.
- (3) Good results observed in 93.1% of cases. Criteria: symptoms of radiation disease and the reaction of skin and mucosa after radiation therapy. (569)

##### ADRENALIN

###### Patients under radiation therapy for malignant tumors

- (2) As salve, (1:1000 adrenalin and 25.0 vaseline) smeared on the skin or vagina mucosa, 10 min. before each roentgen dose. For rectal mucosa adrenalin and starch enemas were used with this composition: 0.5 ml adrenalin 1:1000 in 25 ml of physiological solution, or the same amount of 40% of glucose.
- (3) With radiation therapy for female genital cancer this use of adrenalin decreased the sensitivity of the skin and mucosa somewhat which allowed uninterrupted radiation therapy, and shortened its duration. (310)

##### ADRENOCORTICOTROPIC HORMONE, zinc-phosphate

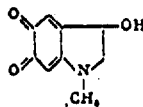
###### Patients aged 19-60, under radiation and telegamma therapy

- (2) 20 units every 24-48 hours; course of therapy 210-560 units.
- (3) Improvement in the general state of well being; nausea and vomiting ceased. (333)

Patients with symptoms of adrenal cortex deficiency due to effect of small doses of radiation

- (2) 20-40 units daily with general strengthening and hemostimulating therapy.
- (3) Observed increase in general well being; increase in leukocyte and thrombocyte content of peripheral blood. Therapeutic effect unstable. (161)

ADRENOCHROME



Patients under radiation therapy

- (2) 10-30 mg daily.
- (3) Benevolent effect on the course of radiation complications. (547)

ACTINOMYCIN D

Children under roentgen therapy for tumors

- (2) No entry.
- (3) Increased skin reaction to irradiation. (357) See also (612a).

AMINAZINE

Patients under roentgen therapy

- (2) Internally 25 mg per dose.
- (3) Nausea and vomiting ceased in 67-69% of patients. (751)

AMINAZINE AND MIXTURE OF AMINO ACIDS

Patients under roentgen therapy

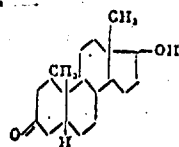
- (2) No entry.
- (3) The decrease in the amount of leukocytes, erythrocytes and hemoglobin in blood was manifested less in patients receiving the preparation. (546)

S-beta-AMINOETHYLISOTHIURONIUM (AET)

Patients under combined roentgen- and Curie-therapy

- (2) 0.4, 0.6 1-3 hours before irr. with 3000-4000 r dose. Total dose 15,000-17,000 r.
- (3) Primary radiation reaction was absent in 11 patients out of 18 receiving the AET preparation. The primary radiation reaction was absent only in 7 out of 18 patients not receiving the preparation. Effect on development of leukopenia was not detected. (124)

ANDROSTAN 17 beta-OL-3-OH; anabalen, anaboleks, androlon, androstanolon, dihydrotestosterone, LG-152, neodrol, stanaprol, stanolon,



Patients under radiation therapy

- (2) 2-3 tablets (25 mg) under tongue; course of therapy 3-8 weeks.
- (3) Benevolent effect on red blood seen in 87% of patients. (570)

SHOSTAKOVSKII'S BALSAM

Patients with radiation epidermitis

- (2) 20% solution of the balsam applied in dry and wet radiation epidermitis.
- (3) Therapeutic effect observed. (301)

SHOSTAKOVSKII'S BALSAM AND TANNIN

Patients under roentgen therapy

- (2) Tannin internally 100 mg daily, Shostakovskii's balsam applied locally on affected portions of the skin.
- (3) Benevolent effect on the course of postradiation indurative edema, accelerated healing of late ulcers. (160)

BATILOL; alpha-octadecyl ether or ester of glycerine; batyl alcohol

Patients with radiation complications of roentgen therapy for malignant tumors and lymphogranulomatoses

- (2) Internally 20-40 mg in tablets 1-2 times a day. 31 persons treated with the preparation; 26 of them were undergoing radiation therapy receiving 200-300 r daily or every second day; total dose of irradiation 1000-5000 r. Five patients because of acute leukopenia did not receive radiation therapy.
- (3) With the preparation, it was possible to administer a course of radiation therapy without decreasing either the dose or the tempo of radiation in 25 patients, and in two patients with resistant leukopenia, it was possible to restore normal amount of leukocytes. Thus, benevolent effect was observed in 27 patients. The preparation was ineffective for patients with lymphogranulomatosis (4 persons). (275)

Patients with leukopenia resulting from roentgen therapy

- (2) No entry.
- (3) (203). See also (204).

## BUTYRYLPERAZINE; megalektil

Patients with radiation disease

- (2) No entry.
- (3) Showed antiemetic effect. (421b)

VITAMIN B<sub>1</sub>Patients under radiation therapy for malignant tumors of female genital organs

- (2) S.C. 1 ml 5% solution after each dose of radiation therapy daily for the whole course of therapy.
- (3) The administration of Vitamin B<sub>1</sub> to 18 patients brought about an insignificant improvement in the detoxifying function of the liver in 8 patients, and a decrease in 10 patients. (98)

VITAMINS B<sub>1</sub>, B<sub>2</sub>, B<sub>6</sub>Patients with esophagus tumors under roentgen therapy

- (2) 90-120 mg daily.
- (3) Decreased symptoms of "roentgen hangover." (119)

Oncological patients, female

- (2) 10-15 mg daily during radiation therapy.
- (3) Normalization of metabolism, improvement in general well-being. (739a)

VITAMINS B<sub>1</sub>, B<sub>6</sub>, B<sub>12</sub>, C, PREDNISOLONE, DIMEDROL, LIPOCAINE, RUTIN, ARSENIC WITH STRYCHNINE, HYDROLYSINE L-130, GAMMA-GLOBULINPatients after surgery for uterine cancer and under roentgen therapy

- (2) B<sub>1</sub>--50 mg, B<sub>6</sub>--25 mg, C--200 mg, B<sub>12</sub>--100, prednisolone--0.01, dimedrol--0.15, lipocaine--0.3, rutin--0.06, arsenic with strychnine--1.0, hydrolysine L-130 250 ml I.V. or I.M. twice a week, gamma-globulin 3-10 ml, once in 10 days. Irr. 500, 530 r in 24 hours. Total dose 15,000-17,000 r.
- (3) Benevolent effect observed in patients with chronic radiation illness developed after roentgen therapy. (104)

VITAMIN B<sub>2</sub>Patients under radiation therapy for malignant tumors of female genital organs

- (2) Internally 20 mg in milk after each dose of radiation for the duration of the course of radiation therapy.
- (3) Detoxifying function of the liver increased in 9 patients out of 18, and in controls (15 patients) who did not receive vitamins, it decreased in all. (98)

VITAMIN B<sub>6</sub>Patients under radiation therapy for malignant tumors

- (2) S.C. or I.M. 100-200 mg daily.
- (3) Therapy of 90 patients removed symptoms of radiation syndrome within 3-5 days (headache, vomiting, adynamia). (619)

Patients with symptoms of radiation disease after radiation therapy

- (2) Preparation was administered for 3 days.
- (3) Considerable improvement observed in 48 patients. (516)

Patients under roentgen therapy

- (2) 10 mg internally.
- (3) Inhibited nausea and vomiting in 62-66%. (75)

Patients under radiation therapy for malignant tumors of female genital organs

- (2) S.C. 2 ml 6% solution after each dose of radiation daily during the whole course of therapy.
- (3) The number of patients with severe disturbances of liver detoxifying function decreased from 13 (before the start of radiation therapy) to 4 at the end of therapy. In patients of control group (15 persons) radiation therapy without vitamin administration resulted in a considerable decrease of liver detoxifying function. (98)

VITAMIN B<sub>12</sub>Patients under radiation therapy for malignant tumors of female genital organs

- (2) S.C. 100 gamma daily after each dose of radiation for the duration of radiation therapy.
- (3) Out of 18 patients detoxifying liver function increased in 11 persons; in controls (15 persons) without vitamin administration it decreased in all persons. (98)

VITAMIN B<sub>12</sub> AND FOLIC ACIDPatients with radiation ulcers

- (2) No entry.
- (3) Local application (B<sub>12</sub>--30 mg and folic acid--10 mg per day) resulted in complete healing of ulcers in 3 out of 4 patients undergoing therapy. (409) See also (739a).

## VITAMIN K

Patients under radiation therapy

- (2) No entry.
- (3) (547).

## VITAMIN P, ASCORBIC ACID, CAMPOLON, TEZAN, ANTIBIOTICS

Patients under roentgen therapy for  
cancer of esophagus

- (2) Vitamin P--0.05, ascorbic acid--0.1, 1-3 powder packages per dose 2-3 times daily before meals.
- (3) Acute pulmonary reactions were observed 2-3 times less frequently than in controls. Development into fibrosis observed only in 3 cases, while in controls in 17. (269a)

## VITAMIN PP

Patients under radiation therapy for  
malignant tumors of female genital organs

- (2) S.C. 1 ml 1% solution per dose and 20 mg internally daily, in the mornings before food intake, during the whole course of radiation therapy.
- (3) Detoxifying liver function increased in 10 patients out of 18, and in 8 persons it decreased; in controls (15 patients) it decreased in all. (96)

## VITAMIN C

Patients under roentgen therapy for  
cancer of female genital organs

- (2) Internally 2000 mg and I.V. 1000 mg on alternate days for 10-15 days.
- (3) Improvement in the general state of well-being and elimination of radiation therapy complications (headache, nausea). (70)

Patients with uterine carcinoma under  
radiation therapy

- (2) No entry.
- (3) (115). See also (188b).

## GALASCORBIN

Patients with malignant tumors of uterus  
and vagina

- (2) Applied in small enema during and after therapy with radioactive substances.
- (3) Radiation proctitis absent in 8 patients out of 18, and in 10 insignificant radiation proctitis. (104a)

## GALOPERIDOL, (sereniak) WITH CINNARIZIN (mitronal)

Patients under roentgen therapy

- (2) Internally.
- (3) Nausea and vomiting were eliminated in the great majority of patients. (751)

## GEPALON

Patients under radiation therapy

- (2) I.M. daily for 3 days in presence of symptoms of general radiation reaction.
- (3) Elimination of general radiation reaction observed in 15 out of 23 cases. (169)

## HYDROCORTISONE, CHLORAMPHENICOL, VITAMIN A

Patients under roentgen therapy

- (2) Hydrocortisone--0.4% alcohol solution, chloramphenicol--0.2% solution, Vitamin A--5000 units 60-120 minutes before or after irradiation with soft roentgen rays.
- (3) Effect absent with prophylactic administration. Therapeutic administration showed benevolent effect on the course of skin erythema. (717)

## HYDROCUMARIN

Gynecological patients under roentgen therapy

- (2) Internally 1-2 ml 0.5% alcohol solution 4 times daily.
- (3) Increase in granulocyte content of peripheral blood. (68)

## DEKADURABOLIN

Patients under radiation therapy

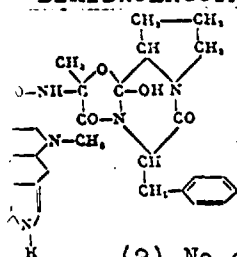
- (2) No entry.
- (3) Normalization of protein metabolism; improvement in general well-being. (570a)

## DEKAMETHAZON, (16 alpha-methyl-9 alpha-fluorprednisolone

Patients under therapy with gamma-rays Co<sup>60</sup>

- (2) Internally, 6-8 tablets on the first day and 3-4 tablets thereafter daily for 5-10 days.
- (3) Benevolent effect observed. (392)

## DIHYDROERGOTAMINE; dirgotan, digidergot, dindergot, digiergot

Patients under roentgen therapy

- (2) No entry.
- (3) Good and stable result observed. (618)



## 1,4-DIMETHYL-7-ISOPROPYLAZULENE

Patients under radiation therapy for malignant tumors

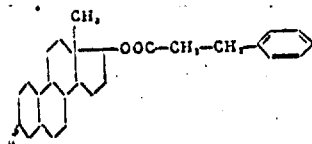
- (2) Preparation administered for prophylaxis and therapy of radiation injuries to skin and mucosa.
- (3) In 54 patients, a decrease in painfulness, inflammation, edema, and necrosis was observed. (690)

## DIET ENRICHED WITH PROTEINS, ASCORBIC ACID, AND GROUP B VITAMINS

Oncological patients under radiation therapy

- (2) No entry.
- (3) During radiation therapy a decrease in blood globin content was not observed in this group, in contrast to control group.

DURABOLIN; antikalabolin, durabol, norstenol, superanabolon, nortestosteronphenylpropionate, 19-nor-17 beta-oxy-3-keto-androsten-17 beta-phenylpropionate

Patients under radiation therapy

- (2) No entry.
- (3) Normalization of protein metabolism and improvement in the clinical picture. (570a)

## DURABOLIN-O

Patients under radiation therapy

- (2) No entry.
- (3) Normalization of protein metabolism and improvement in the state of well-being of patients. (570a)

## REDUCED IRON

Patients with radiation injuries to skin and mucosa

- (2) 1 g 3 times a day internally or by electrophoresis.
- (3) Radiation ulcers healed faster. (329b)

## ACORNS (infusion)

Patients, under radiation therapy for malignant tumors

- (2) Administered for prophylactic and therapeutic purposes; as bandages with preparations, tampons, clysmata, etc.
- (3) The use of preparations for prophylactic purposes was ineffective. The therapy accelerated healing of radiation injury to skin and mucous membranes; the effectiveness of therapy in late injuries less than in acute cases. (352)

## ZYMOSAN

Patients under roentgen therapy

- (2) I.M. 1 mg in physiological solution 2-3 times a week. 12-15 injections in all.
- (3) Improvement in state of well-being observed in 45 out of 60 patients. (667)

## KOAMID

Patients under radiation therapy for cancer with resistant radiation complications

- (2) I.M. 0.5 ml 1% solution per day.
- (3) After few injections improvement observed in the general well-being and increase in number of leukocytes ( $1\frac{1}{2}$ - $2\frac{1}{2}$  times). (127)

Patients with manifest symptoms of radiation reaction

- (2) I.M. 1-0.5 ml 0.5-1% solution daily.
- (3) Increase in number of leukocytes and erythrocytes observed in 13 out of 16 patients. (128)

## COLCHICINE

Patients with malignant tumors

- (2) I.V. 4 mg 16 hours before irradiation of tumors, 500 rad.
- (3) Benevolent results obtained in adenocarcinoma of the stomach, pancreas, and colon. (88)

## CORTISONE

Patients with symptoms of adrenal cortex deficiency developing after chronic effects of small doses of radiation

- (2) 100 mg per dose with background of generally strengthening and blood stimulating therapy.
- (3) Improvement observed in the state of well being, increase in the leukocyte and thrombocyte content of peripheral blood. Therapeutic effect unstable. (161)

## HOMOLOGOUS BONE MARROW

Patients with severe leukopenia and thrombocytopenia resulting from radiation therapy

- (2) No entry.
- (3) More rapid restoration of peripheral blood and bone marrow composition. (592)

## HOMOLOGOUS BONE MARROW

Children with acute lymphatic leukemia  
under roentgen therapy

- (2) In volume 400-658 ml ( $6.2 \times 10^9$  --  $1.36 \times 10^{10}$  cells) at various times after irradiation 320-950 rad. Irradiation in two doses with interval of 24 hours. Dose 1.5-3 r/min.
- (3) Reestablishment of bone marrow function observed in 4 out of 6 patients. (636)

## BONE MARROW

Patients with acute leukosis under  
roentgen therapy

- (2) In various doses (from 3 ml to  $12.9 \times 10^9$  kl) after irr., 200-1596 r.
- (3) All patients died in 20 days to 8 months. (773) See also (611).

## BURNET (POTERIUM SANGUISORBA) (water extract from roots)

Patients under radiation therapy for  
malignant tumors

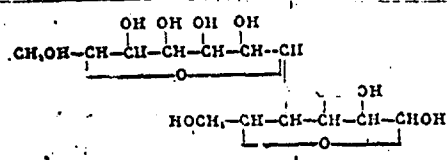
- (2) Administered for prophylactic and also for therapeutic purposes; bandages with preparation, tampons, clysmata, etc.
- (3) Prophylactic application not effective. Therapeutic application showed accelerated healing of radiation injuries of the skin and mucous membranes; the effectiveness of therapy in late injuries less than in acute cases. (352)

## COUMARIN

Gynecological patients under roentgen-or  
teleradiotherapy

- (2) Internally 1-2 ml 0.5% alcohol solution 4 times a day for 10 days. 24 hour dose--30 mg.
- (3) Increase in number of granulocytes in peripheral blood. (68)

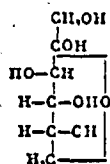
LACTOSE; lactic sugar, 4-beta-galactosidoglucose; 4-beta-D-galactopyranosyl-D-glucose



Patients with symptoms of radiation  
disease after radiation therapy

- (2) Preparation administered for 3 days.
- (3) Considerable improvement observed in 7 patients. (516)

LEVULOSE; levosan, diabetin, inulevan, levoral', levugen, fructose, alpha-fructopyranose



Patients with tumors under roentgen therapy

- (2) I.V. in radiation complications.
- (3) Reduced radiation reaction. (474)

LEUCOGEN, 2 (alpha-phenyl-alpha-carbetoxyethyl)-thiazolidin-4-carbonic acid

Patients with radiation complications  
following roentgen therapy for malignant  
tumors and lymphogranulomatosis

- (2) Internally 20 mg 3 times a day in tablets. 36 patients treated with preparation; 27 of them under roentgen therapy, daily 200-250 r, total dose 1000-10,000 r. Nine patients because of severe leukopenia were not receiving radiation therapy.
- (3) Benevolent effect (increased leukocyte number) in 18 patients; the preparation not effective for patients with lymphogranulomatosis (11 persons). (275) See also (204).

LEOKON (adenine preparation)

Patients with tumors under roentgen therapy

- (2) With roentgen therapy.
- (3) Benevolent effect of preparation observed in radiation anemias. (828)

Patients with leukopenia caused by irradiation

- (2) I.V. or internally 40 mg per day.
- (3) Number of leukocytes reached normal level. (525)

In injuries to skin caused by irradiation

- (2) No entry.
- (3) (525).

## LEUKOCYTE SUSPENSION

Patients with radiation leukopenia

- (2) I.V. 20 ml (0.5 - 0.6 mlrd leukocytes), 8-10 injections.
- (3) Stimulation of leukopoiesis. (89)

## LEUKOCYTIC MASS from donor citrated blood

Patients under roentgen therapy

- (2) I.V. 10 ml (0.5 - 0.6 mlrd leukocytes), 8-10 injections with 1-2 day intervals in the presence of radiation complications.
- (3) Reestablished the number of blood leukocytes, stimulated hemopoietic system. (90)

Patients under radiation therapy for malignant tumors

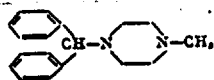
- (2) No entry.
- (3) Administration of preparation prevented development of radiation leukopenia. (7)

## SALVE No. 2 (BILAR), from fresh leaves of woody aloe

Patients with malignant tumors under radiation therapy

- (2) Salve applied before each dose of gamma-irr. 7000 r.
- (3) The use of salve allowed increased irradiation dosage. (206)

MARZIN; cyclysine hydrochloride, 1-diphenyl-methyl-4-methylpiperazine, nautazin, 1-benzhydryl-4-methylpiperazine

Patients under radiation therapy for malignant tumors

- (2) 1-2 tablets (50 mg) 3 times a day during 1-5 days.
- (3) Radiation reaction eliminated completely in 22 out of 47 patients; 17 persons showed considerable improvement and 2 patients showed no effect. (594)

## METACYL; methyluracil, 4-methyluracil

Patients under roentgen therapy for malignant tumors

- (2) Internally, 1 g 3-4 times a day, daily, with total dose 20-40 g, in the presence of symptoms of radiation disease.
- (3) Number of leukocytes increased. (167)

Patients under roentgen therapy for uterine cancer

- (2) 1-4 times a day in suppositories (0.2 g metacyl and 1.5 g cocoa) for radiation proctitis. Total dose 7000-9000 r.

- (3) Complete disappearance of radiation proctitis observed in 45 out of 53 patients and in 7 patients considerable improvement. Pains ceased or decreased to a considerable degree. (72)

Patients under radiation therapy

- (2) Microclisms as suppositories 0.4 g 3-4 times a day for radiation proctitis complicating roentgen-Curie-and telogammatherapy of malignant tumors of female genital organs.
- (3) Within 1-3 days after administration of the preparation, pains, tenesmus, diarrhea, and rectal bleeding ceased. (73)

Patients with radiation ulcers and wet epidermitis

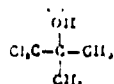
- (2) Locally, 10% salve.
- (3) Cessation of pain syndrome especially in radiation vulvitis and accelerated healing of radiation ulcers. Outstanding results in 1/4 of cases. (73)

MINOPHAGEN C (mixture of amino acids)

Patients with leukopenia resulting from roentgen therapy

- (2) I.V. 20 ml.
- (3) Preparation effective in 4 out of 12 cases. (667)

MAUTIZAN; acetochloron, acetochloroform, anestozal, anoden, chlorbutanol, chlorbutol, chloroton, chlortran, metachloron, metachloroform, tributane, 1,1,1-trichlor-2-methylpropanol-(2)



Patients under roentgen therapy for tumors

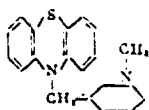
- (2) No entry.
- (3) Lessening of individual symptoms of radiation complications. (474)

OROTIC ACID

Patients under roentgen therapy

- (2) No entry.
- (3) (662).

PAKATAL; pekazin, lakumin, menazin, notiazin, P-391, N-(1-methyl-piperidyl-(3)-methyl)-phenothiazine



Patients under roentgen therapy

- (2) Internally, 50 mg.
- (3) Nausea and vomiting ceased in 213 patients. (751)

## PENTOXYL

Patients with skin cancer under "short-focused" roentgen therapy

- (2) Internally 0.2, 4 times a day with roentgen therapy. Control group received glucose.
- (3) Total dose of roentgen rays required for complete destruction of tumors was less for patients receiving pentoxyl than in the control group. (116) See also (40a, 101, 102, 177a).

## LIVER HYDROLYSATE

Patients under radiation therapy for malignant tumors

- (2) During irradiation, total dose 2900-3600 r.
- (3) Decreased leukopenia and promoted normalization of the composition of plasma protein fractions; had no effect on the activity of transa-urinase and aldolase. (406)

## POLYTAMIN-ES (preparation from essential amino acids)

Patients undergoing roentgen therapy for tumors

- (2) No entry.
- (3) Leukopenia and thrombocytopenia absent in patients treated with the preparation; however, moderate anemia was observed. (660)

## PREDNISOLONE

Patients under roentgen-Curietherapy for malignant tumors of female genital organs

- (2) 2 ml a day for complications of radiation therapy allergic in character.
- (3) Preparation showed definite antiinflammatory and desensitizing effect. (103)

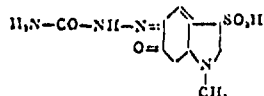
Patients with symptoms of adrenal cortex deficiency caused by chronic effect of small doses of radiation

- (2) 40-60 mg a day, with background of generally strengthening and hemostimulating therapy.
- (3) Improvement in the state of well-being and increase in leukocyte and thrombocyte content of peripheral blood was observed. Therapeutic effect unstable. (161)

Patients under radiation therapy  
for malignant tumors

- (2) Internally 5-10 mg per day before irradiation dose.
- (3) Preparation prevented development of radiation syndrome in 26 patients, and in 17 patients with radiation syndrome (vomiting, headache, etc.) it caused these symptoms to disappear. (476)

PREPARATION AC-17; 1-methyl-5-semicarbazone-6-oxo-2,3,5,6-tetrahydroindole-3-sulfonic acid



Tumor patients under roentgen therapy

- (2) I.V. 100 mg per day.
- (3) With this preparation, radiodermatitis incidence was 12.5%; in control group, 18-60%. (549)

PREPARATION CO-8

Patients with symptoms of radiation reaction

- (2) I.M. 1-0.5 ml 0.5 - 1% solution, daily.
- (3) Increase in leukocytes in 14 out of 20 patients. (128)

PREPARATION CO-9

Patients with symptoms of radiation reaction

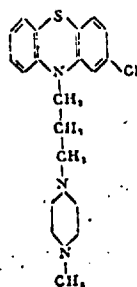
- (2) I.M. 1 ml 0.5-1% solution, daily.
- (3) Increased number of leukocytes in 16 out of 23 patients. (128)

PREPARATION CO-30

Patients under telegamma-and radiotherapy

- (2) I.M. 1 ml 0.1% solution daily.
- (3) Increased number of leukocytes and lymphocytes observed. (123)

PROCHLORPERAZIN; stemetil, 1- $\sqrt{3}$ -(3-chlor-10-phenothiazinyl)-propyl-4-methylpiperazine, kopazin, chlormeptrazin, kompazin, nipodal, temontil, Bayer A-173, 6140 RP, 3-chlor-10- $\sqrt{3}$ -(1"-methyl-4"-piperazinyl)-propyl-phenothiazine





Patients under roentgen therapy

- (2) Internally 10 mg.
- (3) Nausea and vomiting cured in 60-69% of cases. (751)

"QUEEN BEE MILK"No entry

- (2) No entry.
- (3) (737).

SINKAVIT'Patients under roentgen therapy  
for malignant tumors

- (2) I.V. before an irradiation dose.
- (3) Accelerated the process of tumor destruction. (650a)

SOFORIN (infusion of fruit of Japanese sofora)Patients under telegamma therapy

- (2) Spraying of radiation ulcers, and dressings moistened in soforin.
- (3) Favorable effect on the healing of radiation ulcers. (207)

STIPTOBION; (vitamin preparation: vitamin C--100 mg, vitamin P (rutin)--100 mg, vitamin K<sub>4</sub> (dibutyrate)--20 mg)Patients from 30-79 years old under  
roentgen therapy for malignant tumors

- (2) No entry.
- (3) Preparation decreased inflammatory reaction and lowered the incidence of radiodermatitis. (556)

STRYCHNINE-NITRIC ACIDPatients under radiation therapy for  
cancer of female genital organs

- (2) S.C. 1 ml 0.1% solution every two days for the duration of radiation therapy. Single dose of irr., from 200 to 250 r. After external irr., (in some patients--before it, or in the middle of the course) intracavitary application of radium therapy was used: 3-5 doses at 4-5 day intervals.
- (3) The administration of strychnine considerably decreased the incidence of radiation disease (nausea, lessening of the appetite, general weakness), and permitted higher irr. dosage. (175)

TANNIN FROM TEA LEAVESPatients under roentgen therapy

- (2) Internally 100 mg daily in the presence of postradiation indurative edema.

- (3) Application of tannin decreased capillary permeability and had beneficial effect on the course of chronic indurative edema. (160)

## TEZAN-7

Patients under roentgen therapy for  
cancer of female genital organs

- (2) I.M. 1 ml 4 times a day, for 4-12 days.
- (3) Improvement in well-being, decrease in nausea, increase of leukocyte number. (76)

## TEZAN-25

Patients under roentgen therapy for  
cancer of female genital organs

- (2) Internally, 10 drops 3 times a day, for 4-12 days.
- (3) Improvement in general well-being, decrease in nausea, increased number of leukocytes. (76)

Oncological patients under roentgen therapy

- (2) Internally 0.01 g 3-4 times a day or I.M. 1-2 ml 1% solution after 6 hours.
- (3) Stimulation of leukocytosis and lessening of symptoms of "radiation intoxication." (186)

Patients with tumors under roentgen therapy

- (2) Internally 0.01 g 3-4 times a day or I.M. 1-2 ml 0.1% solution after 6 hours. Total dose 22,000-24,000 r (each dose 250 r).
- (3) Prevented or reduced radiation complications. (186)

## TEZAN

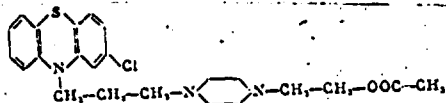
Gynecological patients under  
roentgen-or telegamma therapy

- (2) Internally 15-20 drops 0.5% alcohol solution 4 times a day, for 10-12 days. Daily dose of preparation 20 mg.
- (3) Nausea and vomiting cured in 41 out of 45 patients. Increase in leukocyte content of peripheral blood was observed in 60% of cases. (68)

Patients with malignant tumors of  
various localizations

- (2) I.M. or internally.
- (3) Increase in leukocyte count observed in 67% of cases. Lymphocytes increased in 45%. (122) See also (101).

THIOPROPAZOT; dartaen, dartal, 1-[2'-acetoxyethyl]-4-[3''-(2''-chlor-10''-phenothiazinyl)-propyl]-piperazine



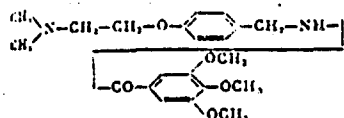
Patients under roentgen therapy

- (2) Internally 10 mg each.
- (3) Nausea and vomiting inhibited in 74 and 69% of cases, respectively. (751)

3,5,5'-1-TRIIODTIRONINPatients under roentgen-and radium therapy

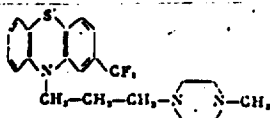
- (2) No entry.
- (3) Preparation was tested on 69 patients. Hair loss ceased, ulcers either decreased or healed, metabolism improved. (491)

TRIMETOBENZAMIDE; tigan, 4-(2'-dimethylaminoethoxy)-N-(3'',4'',5''-trimethoxybenzoyl)-benzylamine

Patients with tumors under radiation therapy

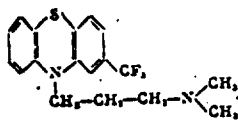
- (2) Internally 0.2 g. Dose of local irr. 1250-2000 r per week Co<sup>60</sup>.
- (3) Nausea and vomiting ceased in 80.6% of patients. (408)

TRIFLUOROPERAZINE; stelazin, paretalin, terfaliuzin, 3-trifluoromethyl-10-[(3'-(4'-methyl-1'-piperazinyl)-propyl]phenothiazine

Patients under roentgen therapy

- (2) Internally 1 mg.
- (3) Nausea and vomiting inhibited in 91 and 84% of cases respectively. (751)

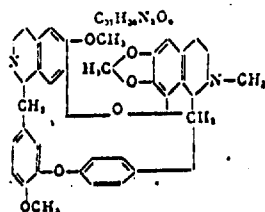
TRIFLUOROPROMAZINE; fluorpromazine, fluorophen, psikvil, sikvil, vespral, vesprin, MC 4703, 10-(3'-dimethylaminopropyl)-3-(trifluormethyl)-phenothiazine

Patients under radiation therapy for malignant tumors

- (2) With gamma-irr. Co<sup>60</sup> 30-60 mg per day.
- (3) Symptoms of radiation syndrome (nausea, vomiting) ceased during the first days of therapy in 20 patients; in 47

patients after 7-10 days; the preparation was ineffective for 42 patients. (418)

#### CEPHARANTHINE



#### Patients with malignant tumors under telegamma therapy

- (2) Internally 3 mg daily with gamma-irr.  $Co^{60}$  750-13,200 r.
- (3) Beneficial effect of preparation observed. Criteria: amount of formed elements and hemoglobin in the blood. (219)

#### CYSTAMINE

#### Patients under roentgen therapy

- (2) Internally 0.2-0.4 g after a roentgen dose.
- (3) Therapeutic effect appeared more quickly than with administration of mercamine. (713)

#### Patients with symptoms of radiation disease after radiation therapy

- (2) Preparation was administered over 3 days.
- (3) Considerable improvement observed in 10 patients. (516)

#### Patients under roentgen therapy

- (2) Internally, in tablets 0.2, 0.4, 0.6, or 0.8 g daily, or every other day, 30-60 minutes before each dose of irradiation.
- (3) Decreased the incidence of radiation complications. (67)

#### CYSTEAMINE

#### Patients under roentgen therapy

- (2) I.V. 200 mg before or after a roentgen dose.
- (3) Preparation decreased the degree of manifestation of radiation complications (nausea, vomiting, diarrhea). (520)

#### Patients under roentgen therapy

- (2) I.V. 200 mg after irr.
- (3) Lesser degree of manifestation of radiation complications observed. (521)

#### Patients under roentgen therapy

- (2) I.V. or as salve applied to the irradiated portion of the skin.

- (3) Salve was more effective but sometimes failed to prevent erythema. (695)

Patients under roentgen therapy

- (2) I.V. 0.2 g 15 minutes before consecutive irr.  
(3) Nausea, vomiting and headache prevented by the preparation. (456)

Patients with cervix uteri epithelioma under radiation therapy

- (2) I.V. 0.2 g daily.  
(3) Observed normalization in blood content of sugar, and of lactic and pyroacemic acids. (419) See also (516).

CYSTEINE

Patients under roentgen therapy

- (2) S.C. 1.5 mg in 100 ml of phosphate buffer pH=7.2 before local irr. 450 r.  
(3) Protective effect absent. (741)

Patients under roentgen therapy

- (2) I.V. 0.1 g before local irr., 800 r.  
(3) Decreased radiation erythema. (770)

Patients under roentgen therapy

- (2) No entry.  
(3) (664).

Patients with radiation cataract

- (2) In the eye, by ionogalvanization from cathode.  
(3) Clouding process reversed; zones of crystalline lenses cleared; vision acuity increased. (327)

CYSTINE

Personnel of radiological departments of hospitals, and persons under roentgen therapy

- (2) 100 mg.  
(3) Administration of preparation permitted the detection of bone marrow hypofunction in early stages of radiation effects. (664)

GALANGA EXTRACT (china root--Alpinia officinarum)

Patients under radiation therapy for malignant tumors

- (2) Administered for prophylactic and therapeutic purposes as dressings, tampons, clysmata, etc.

- (3) Prophylactic application not effective. As therapeutic agent, accelerates healing of radiation injuries to skin and mucous membranes; the effectiveness of therapy in late radiation injuries less than in acute cases. (352)

) EXTRACT OF FLY AGARIC (AMANITA MUSCARIA, A. PANTHERINA)

Patients with symptoms of radiation  
epidermitis

- (2) 10% salve applied to injured portions of skin.  
(3) Marked therapeutic effect observed. (129)

ALOE ARBORESCENS MALL EMULSION

Patients under telegamma therapy  
for malignant tumors

- (2) Emulsion used on the skin areas daily after irr.  
(3) Wet epidermitis, localized at the irradiation site, occurred only in individual instances, and usually at the end of radiation therapy. (208)

EMULSION OF ALOE STRIATICAHAU

Patients under telegamma therapy  
for malignant tumors

- (2) Emulsion used on the skin areas daily after irr.  
(3) Only 2 patients out of 20, whose skin was treated with emulsion, developed wet epidermitis on the symmetrically laid out fields of irradiation. In untreated cases wet epidermitis developed in 7 cases. (208)

AMORPH EMULSION (emulgator-sulfonated high molecular alcohols of sperm whale fat)

Patients under telegamma therapy

- (2) Applied to skin before irr. to prevent radiation epidermitis.  
(3) Effect absent. (207)

EMULSION OF PLACENTAL TISSUE

Patients under roentgen therapy

- (2) S.C. 1-2 times, 20 g each time, with 1% novocaine solution.  
(3) Increase in peripheral blood leukocytes observed in 23 out of 30 patients. (77)

SOPHORE EMULSION

Patients under telegamma therapy

- (2) Applied to skin before irr. to prevent radiation epidermitis.  
(3) Effect absent. (207)

EPIFOL (10 mg folic acid and 30 gamma vitamin B<sub>12</sub>)

Patients under roentgen therapy  
for malignant tumors

- (2) 1-2 ml daily in presence of decreased blood leukocyte and hemoglobin content.
- (3) Preparation reestablished the initial level of blood leukocytes and hemoglobin. (658)

ETHERS OR ESTERS OF ALCOXYGLYCERINE

Patients with cancer of cervix  
uteri under roentgen therapy

- (2) No entry.
- (3) Survival of patients receiving the preparation was longer than in controls. (405a)

ECHINOTOXIN

C<sub>10</sub>H<sub>9</sub>ON

Patients with chronic radiation disease

- (2) Internally twice a day, starting with 5-10 drops, gradually increasing to 15-20 drops per dose. Duration of therapy: 10, 12 and 20 days.
- (3) In patients, whose clinical picture showed preponderance of central nervous system disturbances, considerable improvement was observed: asthenic symptoms decreased, disturbed motor and sensory functions were reestablished. (91)